RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des soumissions - TPSGC
11 Laurier St. / 11, rue Laurier
Place du Portage , Phase III
Core 0A1 / Noyau 0A1
Gatineau
Québec
K1A 0S5
Bid Fax: (819) 997-9776

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

Proposal To: Public Works and Government Services Canada

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Proposition aux: Travaux Publics et Services Gouvernementaux Canada

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet
GRP RIGID HULL INFLATABLE BOAT

Solicitation No. - N° de l'invitation	**Date**
F7047-130020/A	2013-09-12

Client Reference No. - N° de référence du client
F7047-130020

GETS Reference No. - N° de référence de SEAG
PW-$$MC-024-24020

File No. - N° de dossier	**CCC No./N° CCC - FMS No./N° VME**
024mc.F7047-130020	

Solicitation Closes - L'invitation prend fin
at - à 02:00 PM
on - le 2013-10-23

Time Zone
Fuseau horaire
Eastern Daylight Saving Time EDT

F.O.B. - F.A.B.
Plant-Usine: ☐ **Destination:** ☑ **Other-Autre:** ☐

Address Enquiries to: - Adresser toutes questions à:	**Buyer Id - Id de l'acheteur**
Pilon(MC DIV), Chantal	024mc

Telephone No. - N° de téléphone	**FAX No. - N° de FAX**
(819) 956-4308 ( )	(819) 956-7725

Destination - of Goods, Services, and Construction:
Destination - des biens, services et construction:

Specified Herein
Précisé dans les présentes

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Delivery Required - Livraison exigée	**Delivery Offered - Livraison proposée**
See Herein	

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Telephone No. - N° de téléphone
Facsimile No. - N° de télécopieur

Name and title of person authorized to sign on behalf of Vendor/Firm (type or print)
Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)

Signature **Date**

Issuing Office - Bureau de distribution

Ship Construction, Refit and Related Services/Construction navale, Radoubs et services connexes
11 Laurier St. / 11, rue Laurier
6C2, Place du Portage
Gatineau
Québec
K1A 0S5

REQUEST FOR PROPOSALS (RFP) FOR THE PURCHASE OF ONE (1) 8.75 TO 9.25M GLASS REINFORCED PLATIC (GRP) RIGID HULL INFLATABLE BOAT (RHIB) WITH REGULAR CABIN AND TRAILER FOR THE DEPARTMENT OF FISHERIES AND OCEANS CANADA (DFO)

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PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with this bid solicitation.

2. Requirement

The Department of Fisheries and Oceans Canada (DFO) has a requirement to purchase one (1), 8.75 to 9.25 meter glass reinforced plastic (GRP) rigid hull inflatable boat (RHIB) with regular cabin and trailer in accordance with the Technical Statement of Requirement (TSOR) - **Annex "A"** and Bidder Questions and Canada Responses - **Annex "E"**, attached to this RFP.

All deliverables must be delivered by **March 20, 2014**.

This procurement is subject to the Agreement on Internal Trade, the North American Free Trade Agreement, the Canada - Chile Free Trade Agreement, the Canada - Perou Free Trade Agreement and the Canada - Panama Free Trade Agreement.

3. Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

1. Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003, **2013-06-01**, Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

1.1 SACC Manual Clause

B3000T, 2006-06-16, Equivalent Products
A9125T, 2007-05-25, Valid Labour Agreement

2. Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

Due to the nature of the bid Solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

2.1 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least seven (7) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than seven (7) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

4. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the **Province of Ontario**.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

1. Bid Preparation Instructions

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I - Technical Bid (three (3) hard copies and three (3) soft copies on CDs)

Section II - Financial Bid (one (1) hard copy and one (1) soft copy on CD)

Section III - Certifications (one (1) hard copy and one (1) soft copy on CD)

Two (2) packages must be provided with the bid. The first package should include two (2) hard and two (2) soft copies of the Technical Bid, Section I. The other package should include all Sections as requested above.

If there is a discrepancy between the wording of the soft copy and the hard copy, the wording of the hard copy will have priority over the wording of the soft copy.

Prices must appear in the financial bid only. **No prices must be indicated in any other section of the bid.**

Canada requests that bidders follow the format instructions described below in the preparation of their bid:

(a) use 8.5 x 11 inch (216mm x 279 mm) paper;
(b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process Policy on Green Procurement (http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html). To assist Canada in reaching its objectives, bidders should:

1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and

2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

By the submission of a bid, Bidders agree that all supplemental revisions, Addenda or deletions, including answers to questions raised by Bidders during the period prior to submission of bids, must be incorporated in the Bidder's Proposal together with the Bidder's Firm Price.

1.1 Section I - Technical Bid

In their technical bid, bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability in a thorough, concise and clear manner for carrying out the work.

The technical bid must address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

1.1.1 Government Supplied Material (GSM)

Two (2) E-Tec 225 HP outboard motors will be supplied by the CCG as Government Supplied Material (GSM). Bidders must clearly indicate in their bids that these engines will meet the requirement of the TSOR. The Contractor will be required to demonstrate that the outboard meet the speed, range and performance requirements of the TSOR during the test and trials.

Note: The engines will be shipped to the Contractor's facility by the end of **November, 2013.**

1.1.2 Project Schedule

1. As part of its technical bid, the Bidder must propose its preliminary project schedule, in MS Project format or equivalent. The project schedule must include the Bidder's work breakdown structure, the scheduling of main activities and milestone events, and any potential problem areas involved in completing the Work.

2. The Bidder's schedule must also provide a target date for each of the following significant events for each boat:

(a) hull materials delivered to Contractor and sustained construction commenced;
(b) technical manuals delivered to Canada for approval (no less than 14 days prior to the planned delivery date);
(c) boat and trailer delivered to Canada for approval;
(d) the start and the end of the twelve (12) month warranty period.

Note: Technical Manuals will not be returned once approved.

3. The Contract is intended to be awarded by the **end of October 2013**.

1.1.3 Inspection and Test Plan (ITP)

1. Bidders must provide with their bid the inspection plan and testing procedures that will be used to verify, test and inspect all of the components and systems on the boat from initial construction to completion. The ITP must be in accordance with **Annex "F"** attached to this RFP.

2. Bidders must outline the process by which they will address and solve problems or delays with the fabrication, installations, testing and delivery of the boat.

1.1.4 General Plan (GP)

Bidders must provide the general plan for construction of the boat including; how and where the major components will be assembled; how moving the boat will be performed; where and how sea trials will be performed; how many employees will be used during the various stages of the boat construction; how each component (aluminum, GRP, etc.) will be shaped and cut; and where the finished components will be stored.

1.1.5 Education and Experience

Bidders must provide the résumé of the following individuals:

(a) Welding Supervisor;
(b) Logistical Supervisor;
(c) Mechanical Supervisor;
(d) Electrical Supervisor;
(e) Drawing Supervisor;
(f) Inspection and Testing Supervisor;
(g) Overall Project Manager.

1.1.6 Subcontractors

A list, in the form of the attached **Annex "D"** of subcontracts for labor and/or material must be included with the Bidder's Proposal, stating the name and address of each subcontractor, and a description (Make, Model No.) of the goods or services to be supplied by each.

1.1.7 Vessel Contruction Experience

The Bidder must provide objective evidence that it has a proven capability in the construction of vessels of the size, type and complexity which is the subject to this RFP, by providing a detailed list of such boats built within the last five (5) years.

1.1.8 Marine Drafting and Engineering Capability

The Bidder must provide objective evidence that it has either in-house capabilities, or has a written commitment for the duration of the Contract from a supplier to provide marine drafting and engineering services. The supplier must have the experience and capabilities on similar vessel construction projects (same size, type and complexity).

1.1.9 Contractor Quality Management System

1. The Bidder must provide objective evidence that it has a Quality Assurance Program, which must be in place during the performance of the Work, and which addresses the quality control elements below.

2. The objective evidence may be in the form of a copy of the Bidder's Quality Assurance Manual which addresses these elements. Proof of registration with a recognized quality assurance organization whose system addresses the minimum requirements below, may be submitted for consideration.

3. The Bidder must also provide a minimum of three (3) samples of completed quality records used on the most recent marine vessel construction at its facility.

4. The quality control elements must include, as a minimum:

- Management Representative
- Quality Assurance Manual
- Quality Assurance Program Descriptions
- Quality Reporting Organization
- Documentation
- Measuring and Testing Equipment
- Procurement
- Inspection and Test Plan
- Incoming Inspection
- In-Process Inspection
- Final Inspection
- Special Processes
- Quality Records
- Non Conformance
- Corrective Action

5. Bidder facilities may be audited by Canada, or its authorized representative, prior to award of contract to ensure that a system is in place in accordance with the foregoing requirement.

6. The Contractor will be required to submit completed quality assurance documentation with each claim for payment.

1.1.10 Insurance Requirements

The Bidder must provide a letter from an insurance broker or an insurance company licensed to operate in Canada stating that the Bidder, if awarded a contract as a result of the bid solicitation, can be insured in accordance with the Insurance Requirements specified in *Part 6 - Resulting Contract Clause 18.*

If the information is not provided in the bid, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

1.2 Section II - Financial Bid

Bidders must submit their financial bid in accordance with the BASIS OF PAYMENT and the following articles. The total amount of the applicable taxes must be shown separately.

1.2.1 Exchange Rate Fluctuation

C3011T, 2010-01-11, Exchange Rate Fluctuation

1.2.2 Financial Capability

A9033T, 2012-07-16, Financial Capability

1.2.3 Firm Price

Bidders must indicate for each of the following Item, the Bid price excluding taxes.

Description	**Firm Price**
Item 1: One (1) Glass Reinforced Plastic (GRP) Rigid Hull Inflatable Boat (RHIB) with regular cabin built in accordance with Annex "A" and Annex "E"	$_____ (CAD)
Item 2: One (1) trailer built in accordance with Annex "A" and Annex "E"	$_____ (CAD)
Item 3: FOB Destination to Mont-Joli, Québec Transportation cost:	$_____ (CAD)
TOTAL WITHOUT GST/HST	**$_____ (CAD)**

1.2.4 Cost Breakdown

1. Bidders must include with their financial bid a complete cost breakdown of its bid price for the Work. Each item of work or services in the TSOR is to be priced individually to indicate labour, material, overhead and profit. Each item of cost must be cross referenced to the matching article numbers of the TSOR.

2. The cost breakdown must itemize all costs included in its price for the Work in accordance with the Bidder's cost accounting or cost schedule system. Alternatively, Bidders may complete the attached **Annex "C"** which is the minimum amount of information required.

3. The information submitted as a mandatory item will be held as confidential business information. The details of this information may be used for contractual evaluation purposes and/or contract administration purposes.

1.2.5 Unscheduled Work

Bidders must provide the information requested in the Basis of Payment, *Part 6, Article 6.1 - Charge-out Rate / Material Mark-up.*

The unscheduled work rates will be included in the Basis of Payment, however it will not form part of the bid evaluation.

1.3 Section III - Certifications

Bidders must submit the certifications required under *Part 5*.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

(a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical, the management and financial evaluation criteria.

(b) An evaluation team composed of representatives of Canada will evaluate the bids.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

In order to be compliant, Bidder's proposal must, to the satisfaction of Canada, meet all requirements of the TSOR and provide all information as requested in **PART 3 - BID PREPARATION INSTRUCTIONS, 1.1 Section I - Technical Bid.**

1.2 Financial Evaluation

A0222T, 2013-04-25, Evaluation of Price

2. Basis of Selection

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

A mandatory requirement is described using the words "shall", "must", "will" "is required" or "is mandatory".

PART 5 - CERTIFICATIONS

Bidders must provide the required certifications and documentation to be awarded a contract.

The certifications provided by bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default, if any certification made by the Bidder is found to be untrue whether during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply with this request will also render the bid non-responsive or will constitute a default under the Contract.

1. Mandatory Certifications Required Precedent to Contract Award

1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

1.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list (http://www.hrsdc.gc.ca/eng/labour/index.shtml) available from Human Resources and Skills Development Canada (HRSDC) - Labour's website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid " list at the time of contract award.

2. Additional Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid, but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a time frame within which to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

2.1 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

PART 6 - RESULTING CONTRACT CLAUSES

1. Security Requirement

There is no security requirement applicable to this Contract.

2. Requirement

The Contractor must deliver to the Department of Fisheries and Oceans Canada (DFO) one (1), 8.75 to 9.25 meter glass reinforced plastic (GRP) rigid inflatable boat (RHIB) with regular cabin and trailer in accordance with the Technical Statement of Requirement (TSOR) - Annex "A" and the Bidder Questions and Canada Responses - Annex "E", attached to this RFP.

Delivery location:

Fisheries & Oceans Canada
Maurice Lamontagne Institute
850, route de la Mer
Mont-Joli, Quebec
G5H 3Z4 CANADA

(information will be provided at contract award)

Contact:_____ Phone number: _____

3. Standard Clauses & Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

3.1 General Conditions

2030, **2013-06-27**, Goods (Higher Complexity) apply to and form part of the Contract.

3.2 Supplemental General Conditions

1028, **2010-08-16**, Ship Construction - Firm Price, apply to and form part of the Contract.

Warranty

The Supplemental General Conditions 1028, Article 12 - Warranty, paragraph 3 is deleted and replaced with the following:

The warranty period for the propelling machinery and auxiliaries, fittings and equipment of all kinds (excluding GSM) is twelve (12) months and the warranty period for the hull is 24 months from the date of its delivery to and acceptance by Canada.

4. Term of Contract

4.1 Delivery date

A quantity of one (1) glass reinforced plastic (GRP) rigid hull inflatable boat (RHIB) with regular cabin must be delivered upright, stable, seaworthy, afloat alongside on its trailer. The boat and trailer must be ready for Acceptance by Canada at the delivery location identified at Clause 2 above, on or before **March 20, 2014**.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Chantal Pilon, Supply Team Leader
Department of Public Works and Government Services Canada
Acquisitions Branch
Marine Sector
6C2, Place du Portage, Phase III
11 Laurier Street,
Gatineau, QC. K1A 0S5
CANADA

Tel: (819) 956-4308
E-mail: chantal.pilon@pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract, and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based or verbal or written requests or instructions from anybody other than the Contracting Authority.

5.2 Technical Authority *(information will be provided at contract award)*

The Technical Authority for the Contract is:

Name:
Title:
Organization:
Address:

Telephone:
Facsimile:
E-mail:

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority, however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

5.3 Inspection Authority *(information will be provided at contract award)*

The Inspection Authority for the Contract is:

Name:
Title:
Department or Agency:
Address:

Telephone:
Facsimile:
E-mail address:

The Inspection Authority is the representative of the department or agency for whom the Work is being performed under the Contract and is responsible for inspection of the Work and acceptance of the finished work. The Inspection Authority may be represented on-site by a designated inspector and any other Government of Canada inspector who may from time to time be assigned in support of the designated Inspector.

6. Payment

6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of $ _____ . Customs duties are included and Goods and Services Tax or Harmonized Sales Tax is extra, if applicable.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

Charge-out Rate / Material Mark-up

The following rates are included in the Basis of Payment and must remain valid for the duration of the contract:

1. The Charge-out Rate specified below includes all classes of labor, engineering and foreperson, and all overheads, supervision and profit. The Charge-out Rate will be used for pricing unscheduled work that results in an increase or decrease in the Work Period, except as noted in the clause entitled "Overtime."

Charge-out Rate - $..... /person/hour

2. Overtime:

Occasionally, Canada may elect to authorize overtime, for Unscheduled Work only. If this is the case, and the rate is greater than the Charge-out Rate, cost of labor hours will be determined on the following basis;

Time and one-half rate: $..... /person/hour
Double Time Rate: $..... /person/hour

3. The cost of material must be the net laid-down cost of the material to which must be added a mark-up of 10% of the net laid-down cost of the material. For the purposes of pricing, Unscheduled Work and material must be deemed to include subcontracts.

6.2 Payment for Fuels, Oils and Lubricants

The Contractor is responsible for the supply and cost of all fuel, lubricating oil, hydraulic oil and other lubricants sufficient for fully charging all systems as required for operating the machinery and other equipment and for performing all tests and trials.

6.3 Field Engineering and Supervisory Services

If Field Service Representatives (FSR) and/or Supervisory Services are required for the Work, the cost of all such services is to be included in the price for the Work.

6.4 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.5 Milestone Payment

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:

(a) an accurate and complete claim for payment using PWGSC-TPSGC 1111, Claim for Progress Payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;

(b) all the certificates appearing on form PWGSC-TPSGC 1111 have been signed by the respective authorized representatives;

(c) all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

6.6 Schedule of Milestones

The schedule of milestones for which payments will be made in accordance with the Contract is as follows:

Milestone No.	Description or deliverable(s)	%	Firm Amount
A	Hull materials delivered to Contractor and sustained construction commenced	30%	
B	Boat, trailer and technical manuals delivered and accepted by Canada	65%	
C	End of the 12 month warranty period. Final acceptance	5%	

The milestones shown above must be included and identified in all production schedules.

The payment for the delivery, **Milestone "B"** must be payable by Canada upon delivery and acceptance of the boat, trailer and manuals by Canada, minus the holdback for double the total estimated value of any outstanding work items.

The holdback for outstanding work must be payable by Canada upon completion of the outstanding work and when the work is accepted by Canada.

The payment for completion of the twelve month warranty period, **Milestone "C"** must be payable by Canada upon completion of the warranty period of the vessel, minus the total cost of any work undertaken by Canada to repair any defects subject to warranty.

7. Invoicing Instructions

1. The Contractor must submit a claim for payment using form PWGSC-TPSGC 1111, Claim for Progress Payment.

Each claim must show:

(a) all information required on form PWGSC-TPSGC 1111;
(b) all applicable information detailed under the section entitled "Invoice Submission" of the general conditions;
(c) the description and value of the milestone claimed as detailed in the Contract;
(d) Quality assurance documentation when applicable and/or as requested by the Contracting Authority.

2. The Goods and Services Tax or Harmonized Sales Tax (GST/HST), as applicable, must be calculated on the total amount of the claim before the holdback is applied. At the time the holdback is claimed, there will be no GST/HST payable as it was claimed and payable under the previous claims for progress payments.

3. The Contractor must prepare and certify one original and one (1) copy of the claim on form PWGSC-TPSGC 1111, and forward it to the Contracting Authority identified under the section entitled "Authorities" of the Contract for appropriate certification after inspection and acceptance of the Work takes place.

The Contracting Authority will then forward the original of the claim to the Technical Authority for certification and onward submission to the Payment Office for the remaining certification and payment action.

4. The Contractor must not submit claims until all work identified in the claim is completed.

8. Certifications

Compliance with the certifications provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification or it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Project Schedule

1. The Contractor must provide an updated detailed project schedule in MS Project format or equivalent to the Contracting Authority and the Technical Authority **5 days after award of Contract**. This schedule must highlight the specific dates for the events listed below and include the work breakdown structure, the scheduling of main activities and any potential problem areas involved in completing the Work.

(a) hull materials delivered to Contractor and sustained construction commenced;
(b) technical manuals delivered to Canada for approval (no less than 14 days prior to the delivery date);
(c) boat and trailer delivered to Canada for approval;
(d) start and end of the twelve (12) month warranty period.

2. The schedule is to be regularly updated and available in the Contractor's office for review by Canada's authorities to determine the progress of the Work.

10. Progress Report

1. The Contractor must submit monthly reports on the progress of the Work in an electronic format to the Technical Authority and to the Contracting Authority.

2. The progress report must contain two (2) Parts:

(a) PART 1: The Contractor must answer the following three questions:

(i) is the project on schedule?
(ii) is the project within budget?
(iii) is the project free of any areas of concern in which the assistance or guidance of Canada may be required?

Each negative response must be supported with an explanation.

(b) PART 2: A narrative report, brief, yet sufficiently detailed to enable the Technical Authority to evaluate the progress of the Work, containing as a minimum:

(i) a description of the progress of each task and of the Work as a whole during the period of the report. Sufficient sketches, diagrams, photographs, etc., must be included, if necessary, to describe the progress accomplished.

(ii) an explanation of any variation from the schedule.

11. SACC Manual Clauses

B9035C - Progress Meetings, 2008-05-12
B5007C - Procedures for Design Change or Additional Work, 2010-01-11
D3015C - Dangerous Goods/Hazardous Products, 2007-11-30
D0018C - Delivery and Unloading, 2007-11-30
C0711C - Time Verification, 2008-05-12
H4500C - Lien - Section 427 of the Bank Act, 2010-01-11

12. Trade Qualifications

The Contractor must use qualified, certified (where applicable) and competent tradespeople and supervision to ensure a uniform high level of workmanship. The Contracting Authority may request to view and record details of the certification and/or qualifications held by the Contractor's tradespeople. This request should not be unduly exercised but only to ensure qualified tradespeople are on the job.

13. Quality Management Systems

1. The Contractor must have in place a Quality Assurance Program approved by the Inspection Authority during the performance of the Work which addresses the quality control elements below.

2. The quality control elements must include, as a minimum:

- Management Representative
- Quality Assurance Manual
- Quality Assurance Program Descriptions
- Quality Reporting Organization
- Documentation
- Measuring and Testing Equipment
- Procurement
- Inspection and Test Plan
- Incoming Inspection

- In-Process Inspection
- Final Inspection
- Special Processes
- Quality Records
- Non Conformance
- Corrective Action

3. The Contractor's facilities may be audited by Canada, or its authorized representative, during the performance of the Work to ensure that the approved system is in place and in accordance with the foregoing requirement.

4. The Contractor will be required to submit completed quality assurance documentation with each claim for payment as applicable.

14. Post Contract Award/Pre-Production Meeting

Within three (3) working days of the receipt of the contract, the Contractor must contact the Contracting Authority to determine the details of a pre-production meeting. The meeting will be held at the Contractor's plant. Cost of holding such pre-production meeting must be included in the price of the bid. Please note that the travel and living expenses for Government Personnel will be arranged and paid for by the Canada.

15. Manuals

1. The Contractor must obtain and deliver to the Technical Authority, no later than fourteen calendar (14) days prior to delivery of each boat for approval all Data Books, Operating Instruction Books, Maintenance Manuals and Spare Parts Lists (including part numbers and ordering instructions) for all machinery and equipment fitted on the Vessel as required. Once approved by the TA, the Contractor will provide two (2) complete copies in accordance with and as specified in the **TSOR, Article 4.0 - Documentation**.

2. Where manuals are examined by Canada, such examination does not relieve the Contractor of any responsibility under the Contract for ensuring the correctness of all details and adequacy of performance of the Vessel, nor does it obligate Canada to accept, in part or in whole, an item of Work completed in accordance with such manual, nor does it mean such an item of Work meets the requirements of the TSOR.

16. Inspection, Test & Trials

1. During Construction of the vessel, the Contractor must arrange for regular inspections and upon completion of the construction of the vessel, the Contractor must arrange trials. All Inspections and test and trials performed must be in accordance with the TSOR and the **Annex "F"** - Inspection/Quality Assurance/Quality Control. The Inspection Authority must approve any additional testing not specified in the TSOR.

2. The Contractor must update as required the Inspection and Test Plan (ITP) provided with its bid and submit to the Contracting Authority and the Inspection Authority seven (7) days after contract award for review and amended by the Contractor to the satisfaction of the Inspection Authority.

3. Once approved, any modification to the ITP must be pre-approved by the Inspection Authority. A revised ITP will be required should any modification be made.

17. Government Supplied Material

As per TSOR, **Article 6.5.3**, the Contractor must install as per manufacturer recommendations the following GSM on the boat:

(a) Dual 225 HP outboard motors

Note: The engines will be shipped to the Contractor's facility by the **end of November, 2013.**

18. Insurance Requirements

The Contractor must comply with the insurance requirements specified in **Articles 18.1** and **18.2** below. The Contractor must maintain the required insurance coverage for the duration of the Contract. Compliance with the insurance requirements does not release the Contractor from or reduce its liability under the Contract.

The Contractor is responsible for deciding if additional insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any additional insurance coverage is at the Contractor's expense, and for its own benefit and protection.

The Contractor must forward to the Contracting Authority within ten (10) days after the date of award of the Contract, a Certificate of Insurance evidencing the insurance coverage and confirming that the insurance policy complying with the requirements is in force. Coverage must be placed with an Insurer licensed to carry out business in Canada. The Contractor must, if requested by the Contracting Authority, forward to Canada a certified true copy of all applicable insurance policies.

18.1 General Commercial Insurance

1. The Contractor must obtain Commercial General Liability Insurance, and maintain it in force throughout the duration of the Contract, in an amount usual for a contract of this nature, but for not less than $2,000,000 per accident or occurrence and in the annual aggregate.

2. The Commercial General Liability policy must include the following:

(a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada should read as follows: Canada, as represented by Public Works and Government Services Canada.

(b) Bodily Injury and Property Damage to third parties arising out of the operations of the Contractor.

(c) Products and Completed Operations: Coverage for bodily injury or property damage arising out of goods or products manufactured, sold, handled, or distributed by the Contractor and/or arising out of operations that have been completed by the Contractor.

(d) Personal Injury: While not limited to, the coverage must include Violation of Privacy, Libel and Slander, False Arrest, Detention or Imprisonment and Defamation of Character.

(e) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

(f) Blanket Contractual Liability: The policy must, on a blanket basis or by specific reference to the Contract, extend to assumed liabilities with respect to contractual provisions.

(g) Employees and, if applicable, Volunteers must be included as Additional Insured.

(h) Employers' Liability (or confirmation that all employees are covered by Worker's compensation (WSIB) or similar program).

(i) Broad Form Property Damage including Completed Operations: Expands the Property Damage coverage to include certain losses that would otherwise be excluded by the standard care, custody or control exclusion found in a standard policy.

(j) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of policy cancellation.

(k) If the policy is written on a claims-made basis, coverage must be in place for a period of at least 12 months after the completion or termination of the Contract.

(l) Owners' or Contractors' Protective Liability: Covers the damages that the Contractor becomes legally obligated to pay arising out of the operations of a subcontractor.

(m) Non-Owned Automobile Liability - Coverage for suits against the Contractor resulting from the use of hired or non-owned vehicles.

(n), (o), (p), (q) not used.

(r) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8

For other provinces and territories, send to:
Senior General Counsel,
Civil Litigation Section,
Department of Justice
234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

18.2 Marine Liability Insurance

1. The Contractor must obtain Protection & Indemnity (P&I) insurance that must include excess collision liability and pollution liability. The insurance must be placed with a member of the International Group of Protection and Indemnity Associations or with a fixed market in an amount of not less than the limits determined by the Marine Liability Act, S.C. 2001, c. 6. Coverage must include crew liability, if it is not covered by Worker's Compensation as detailed in paragraph (2.) below.

2. The Contractor must obtain Worker's Compensation insurance covering all employees engaged in the Work in accordance with the statutory requirements of the Territory or Province or state of nationality, domicile, employment, having jurisdiction over such employees. If the Contractor is assessed any additional levy, extra assessment or super-assessment by a Worker's Compensation Board, as a result of an accident causing injury or death to an employee of the Contractor or subcontractor, or due to unsafe working conditions, then such levy or assessment must be paid by the Contractor at its sole cost.

3. The Protection and Indemnity insurance policy must include the following:

(a) Additional Insured: Canada is added as an additional insured, but only with respect to liability arising out of the Contractor's performance of the Contract. The interest of Canada as additional insured should read as follows: Canada, represented by Public Works and Government Services Canada.

(b) Waiver of Subrogation Rights: Contractor's Insurer to waive all rights of subrogation against Canada as represented by Fisheries and Oceans Canada and Public Works and Government Services Canada for any and all loss of or damage to the watercraft however caused.

(c) Notice of Cancellation: The Insurer will endeavour to provide the Contracting Authority thirty (30) days written notice of cancellation.

(d) Cross Liability/Separation of Insureds: Without increasing the limit of liability, the policy must protect all insured parties to the full extent of coverage provided. Further, the policy must apply to each Insured in the same manner and to the same extent as if a separate policy had been issued to each.

(e) Litigation Rights: Pursuant to subsection 5(d) of the Department of Justice Act, S.C. 1993, c. J-2, s.1, if a suit is instituted for or against Canada which the Insurer would, but for this clause, have the right to pursue or defend on behalf of Canada as an Additional Named Insured under the insurance policy, the Insurer must promptly contact the Attorney General of Canada to agree on the legal strategies by sending a letter, by registered mail or by courier, with an acknowledgement of receipt.

For the province of Quebec, send to:

Director Business Law Directorate,
Quebec Regional Office (Ottawa),
Department of Justice,
284 Wellington Street, Room SAT-6042,
Ottawa, Ontario, K1A 0H8
For other provinces and territories, send to:

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Civil Litigation Section,
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234 Wellington Street, East Tower
Ottawa, Ontario K1A 0H8

4. A copy of the letter must be sent to the Contracting Authority. Canada reserves the right to co-defend any action brought against Canada. All expenses incurred by Canada to co-defend such actions will be at Canada's expense. If Canada decides to co-defend any action brought against it, and Canada does not agree to a proposed settlement agreed to by the Contractor's insurer and the plaintiff(s) that would result in the settlement or dismissal of the action against Canada, then Canada will be responsible to the Contractor's insurer for any difference between the proposed settlement amount and the amount finally awarded or paid to the plaintiffs (inclusive of costs and interest) on behalf of Canada.

19. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Province of Ontario.

20. Priority of Documents

If there is a discrepancy between the wordings of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

1. The Articles of Agreement;
2. The Supplemental General Conditions 1028, **2010-08-16**, Ship Construction Firm Price;
3. The General Conditions 2030, **2013-06-27**, Goods (Higher Complexity);
4. Annex "A" - Technical Statement of Requirement;
5. Annex "B" - National Asset Code;
6. Annex "C"- Cost Breakdown;
6. Annex "D" - Subcontractors;
7. Annex "E" - Bidder Questions and Canada Responses;
8. Annex "F" - Inspection/Quality Assurance/Quality Control;
9. The Contractor's bid dated _____.

21. Acceptance

1. Canada's provisional acceptance for delivery of the vessel must occur with the execution of a certificate in accordance with form **PWGSC 1105** upon satisfactory completion of the vessel and all trials. The execution of the certificates must in no way relieve the Contractor of any obligations under the Contract.

2. It is understood and agreed that where the work has been substantially completed and the parties have agreed upon the terms and conditions for the Contractor to make good any deficiencies, the certificate referred to above may be executed with a statement attached concerning the rectification of the deficiencies by the Contractor.

3. Canada's final acceptance must occur upon completion of the twelve (12) month warranty period and settlement of all accounts between the parties in relation to the Contract.

Fisheries and Oceans Canada | Pêches et Océans Canada

DEPARTMENT OF FISHERIES AND OCEANS

ANNEX A

Technical Statement of Requirements
Requisition number F7047-13-0020, provision of Quantity One (1) Science, 8.75-9.25m Glass Reinforced Plastic (GRP) Rigid Hull Inflatable Boat (RHIB) with Regular Cabin and Trailer.

Revision 1, September 9, 2013

TRANSPORT CANADA MARINE SAFETY BRANCH (TCMSB)
TP1332 APPROVED CONSTRUCTION

Canada

Document Control

Record of Amendments

#	Date	Description	Initials
0	August 21, 2013	Original Issue	KA
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1.0 ROLE / FUNCTIONS

1.1 USE OF SMALL BOATS WITHIN FISHERIES AND OCEANS

Fisheries and Oceans Canada (DFO) buys, manages and operates numerous small boats in support of its departmental programs and other missions, within its three Sectors:

Canadian Coast Guard (CCG)

Manages a fleet of ships and small boats (known as the CCG Fleet) that carry out multi-tasked missions on behalf of all DFO Programs. CCG also operates small boats independently of the Fleet structure in support of specific programs, such as Marine Navigational Services (MNS), Search and Rescue (SAR), Safety and Environmental Response (SER).

Fisheries Management Sector

Manages and operates small boats in support of its Conservation and Protection (C&P) enforcement programs.

Science Sector

Manages and operates small boats in support of its Hydrographic and Oceanographic programs.

1.2 ROLE AND FUNCTIONS OF RIGID HULL INFLATABLE BOATS (RHIBs) (MISSION STATEMENT)

RHIBs are used extensively as auxiliary boats for the CCG Fleet of vessels, as well as operating independently to carry out various program-related activities from shore-based facilities and trailers. RHIB's are involved in virtually all types of waterborne missions conducted by DFO, with the exception of ice breaking.

1.2.1 The Primary Missions of the boats include Search and Rescue, Emergency Boat duties, and Fisheries Conservation and Protection.

1.2.2 Secondary Missions include Marine Navigation Services, Environmental Response, Science support duties and support to various government departments and other agencies.

1.2.3 In carrying out these Missions, the boats perform the following broad functions:

1.2.3.1 Conduct patrols;

1.2.3.2 Perform searches and surveillance by visual and electronic means;

1.2.3.3 Pursue, pace and board other vessels;

1.2.3.4 Recover able-bodied or incapacitated people from other vessels and from the water;

1.2.3.5 Transport able-bodied or incapacitated people, and equipment;

1.2.3.6 Tow equipment and other vessels;

1.2.3.7 Conduct helicopter-hoisting operations;

1.2.3.8 Deploy, recover, and inspect navigation aids, fishing gear, pollution response gear, scientific instruments and other equipment;

1.2.3.9 Provide a platform for performing first aid;

1.2.3.10 Marmusting of life rafts and lifeboat; and

1.2.3.11 Standby boat for diving operations.

1.3 UTILIZATION

RHIBs are used in all DFO Regions: Newfoundland, Maritimes, Gulf, Québec, Central & Arctic and Pacific. These boats are used in all applications in which DFO operates ships and small boats: offshore, inshore and in sheltered waters.

1.4 INTENT

The Contractor must fabricate and supply quantity one (1) Science Glass Reinforced Plastic (GRP) Rigid Hull Inflatable Boat (RHIB) with Regular Cabin and trailer based on the current Transport Canada Marine Safety Branch (TCMSB) Marine Safety Publication TP 1332 “Construction Standards for Small Vessels” (hereinafter referred to as TCMSB TP 1332). The boats must be dual gasoline outboard motor configuration.

TCMSB Website - http://www.tc.gc.ca/eng/marinesafety/tp-menu-515.htm

2.0 DESIGN & CONSTRUCTION PRACTICES

2.1 ERGONOMIC DESIGN – GENERAL

2.1.1 Hazardous operating conditions must be prevented by arranging machinery and equipment in a safe manner; providing guards for all electrical, mechanical and thermal hazards to personnel; and providing guards or covers for any controls that might accidentally be activated by contact of personnel.

2.1.2 The boats must be designed and constructed to accommodate both male and female crew in cold weather clothing and equipment in accordance with ASTM F1166-07 Standard Practice for Human Engineering Design for Marine Systems, Equipment, and Facilities.

2.1.3 Human engineering factors considered in design must include accessibility, visibility, readability, crew efficiency and comfort. All equipment must be accessible for use, inspection, cleaning and maintenance.

2.2 VIBRATION

The boats and all components must be free of local vibration that could endanger boat personnel, damage boat structure, machinery or systems, or interfere with the operation or maintenance of boat machinery or systems.

2.2.1 No component must rattle. Mounts for movable components, including items moved for stowage, towing or transport must be provided with resilient material as necessary to prevent rattling.

2.2.2 Loosening of fasteners under vibration must be prevented by the use of self- locking fasteners, as applicable.

2.3 EQUIPMENT PROTECTION

The Contractor is responsible for the care of all equipment. All parts, especially those having working surfaces or passages intended for lubricating oil, must be kept clean and protected during manufacture, storage, assembly and after installation. Equipment must at all times be protected against dust, moisture or foreign matter and must not be subject to rapid temperature changes or extremes in temperature.

2.4 SITE HYGIENE

During construction, all chips, shavings, refuse, dirt and water must be removed at the completion of the work shift or sooner. The Contractor must ensure measures are taken to avoid wear and damage incident to construction, and to prevent corrosion or other deterioration. Equipment subject to freezing must be kept drained, except during test and trials. Equipment must be kept clean and protected from the environment prior to installation.

2.5 CONTRACTOR'S FACILITY

The boats must be constructed in an enclosed facility that provides lighting, protection from wind, rain and snow, and has a heating system that allows for automatic temperature control that maintains the temperature between 16°C and 25°C and a relative humidity below 70 percent, throughout the construction period.

3.0 INTEGRATED LOGISTIC SUPPORT

3.1 COMPONENTS AND EQUIPMENT SUPPORT

The boats must be designed and constructed for ease of maintenance and repair, long life, and to be easily supportable by local commercial facilities and suppliers. All components and all mechanical, auxiliary, electronic and electrical equipment installed on the boats must be supportable by parts and service in Canada within 30 days. The collar must be supportable by parts and service in Canada within 30 days. All components and equipment must be current production models.

3.2 SPARE PARTS

To facilitate replacement and inter-changeability of parts, as well as maintenance procedures and operator training wherever practicable:

3.2.1 The Contractor must standardize on selection of equipment, fittings and fabrication methods within all boats supplied.

3.2.2 Exceptions must only be accepted where expressly agreed by the Technical Authority and in all cases where advances in technology have rendered previous counterparts obsolete.

3.3 PARTS DEPOT

The Contractor's parts depots must be capable of efficiently supplying spare parts for all components of the boats.

3.4 SERVICE DEPOTS

The Contractor must have a factory authorized service depot capable of servicing the Quebec Region within 48 hours of receiving a service call.

4.0 DOCUMENTATION

All documentation must be provided in both official languages of Canada (English and French).

4.1 TECHNICAL PUBLICATIONS GENERAL

Upon delivery of each boat, the Contractor must supply and deliver three (3) copies of a comprehensive Owner/Operator Technical Manual, to be distributed as set out below. The Owner/Operator Technical Manual must provide a physical and functional description of the boat, its machinery and equipment, as well as delivery testing and sea trial result documentation. For registration purposes the manuals must include a copy of the bill of sale, tonnage certification and the builders completed portion of the Small Vessel Compliance Program (SVCP). For the SVCP the builder will provide signed copy of the completed spreadsheet in PDF format and the original excel spreadsheet for the Owner/Operator to utilize for submission.

The manual must include sections such as General Information, Technical Information, and an Initial Spare Parts List. A table of contents must be included with sections and subsections clearly labeled following the sequence addressed below. Each manual must be in both official languages of Canada (English and French).

The Contractor must supply and distribute the comprehensive Owner/Operator Technical Manuals as follows:

- one (1) complete hard copy set of the Owner/Operator technical manuals and one (1) CD electronic copy to be provided with the boat; and
- two (2) complete hard copy sets of the Owner/Operator technical manuals and two (2) CD electronic copies to be provided to the Technical Authority.

4.2 GENERAL INFORMATION SECTION

The General Information Section must include a description of the arrangement and function of all structures, systems, fittings and accessories that comprise the boat, with illustrations as appropriate:

4.2.1 Operating procedures;

4.2.2 Basic operating characteristics (such as temperatures, pressures, flow rates, etc.);

4.2.3 Installation criteria and drawings, assembly and disassembly instructions with comprehensive illustrations showing each step (including instructions necessary for onboard repair of the collar);

4.2.4 Recommended planned maintenance; and

4.2.5 Complete troubleshooting procedures.

4.3 TECHNICAL INFORMATION SECTION

The Technical Information Section must include a complete set of detailed owners/operators manuals, drawings, initial spare parts list and supplemental data for all components of the boat (whether acquired from external sources or custom-manufactured), including:

4.3.1 Initial Spares Parts List; The initial spare parts list must include the name, part number and serial number, if applicable of the parts, items or components and must indicate the supplier (name, address, phone number, email address) of the part, equipment or component and identify in which part of the TSOR the item appears;

4.3.2 Hull; including hull data, TEST and TRIAL results, serial or manufacturers numbers, and equipment warranty cards;

4.3.3 Collar; including collar materials and glue materials, and procedures necessary for onboard repair of the collar;

4.3.4 Motors/Engine(s) and equipment: including motor/engine and propulsion serial numbers;

4.3.5 Electronics, (if applicable): including model and serial numbers.

4.3.6 Regulatory and Stability information: as required per TCMSB TP 1332, which references ISO 12217-1:2002 that further references ISO 6185-3:2001 for RIBs; and

4.3.7 Deck Machinery Equipment, including model and serial numbers.

4.4 INITIAL SPARE PARTS LIST

The Technical Publications must also include a list of recommended initial onboard spare parts to be stocked for the boat. At a minimum, this list must include the following items (as applicable):

4.4.1 Propulsion: Propellers, filters, batteries, throttle and shift cables, special engine tools;

4.4.2 Collar: air valve, foot pump, pressure gauge, patch kit and 12 Volt (V) High Pressure Pump;

4.4.3 Electrical: fuses, light bulbs; and

4.4.4 Boat Structures and Fittings: Miscellaneous commonly used fasteners.

4.5 ADDITIONAL DELIVERABLE DOCUMENTATION

4.5.1 The following additional documentation must be delivered with each boat:

4.5.1.1 Tonnage Registration Certificate in accordance with TP 13430 - http://www.tc.gc.ca/eng/marinesafety/svcp-gt-3948.htm

4.5.1.2 Registration to the Small Vessel Compliance Program SVCP Website: http://www.tc.gc.ca/eng/marinesafety/svcp-menu-3633.htm

4.5.1.3 Bill of Sale

4.5.1.4 A valid Motor Vehicle Registration Certificate for the relevant Province, for the trailer supplied.

4.5.1.5 Test & Trial results (Manoeuvring Data Sheets-Appendix A)

4.5.1.6 Acceptance Certificates, i.e. life saving appliances, lifting appliances, engine test reports, calibration certificates, extinguishers, etc.

4.5.1.7 All contractor internal testing check sheets.

5.0 TEST & TRIALS

5.1 GENERAL

The Contractor must inspect, test and compile a report, providing the following information in the technical publication (Technical Information Section), as a minimum, for adherence to the Contract requirements and proper operation of the equipment (proper operation means that the equipment can be started, operated, connected together and demonstrated to function in a normal fashion, as applicable). All discrepancies must be corrected prior to delivery. The required inspections and tests are minimums and are not intended to supplant any controls, examinations, inspections or tests normally employed by the Contractor to assure the quality of the boat:

5.1.1 Weight;

5.1.2 Construction Quality;

5.1.3 Lifting Gear;

5.1.4 Propulsion system;

5.1.5 Propulsion Controls;

5.1.6 Steering System;

5.1.7 Fuel System;

5.1.8 Electrical System;

5.1.9 Starting System;

5.1.10 Electronics; and

5.1.11 Deck Machinery

5.2 SEA TRIALS – GENERAL

Sea trials must be conducted by the Contractor to demonstrate the boat and its equipment conform to the requirements as stated in the Contract and the performance requirements. All expenses incident to the trials must be borne by the Contractor unless otherwise specified. The Contractor must also carry out the break-in period of the propulsion system per the manufacturer's procedures. A crew provided by the Contractor must operate the boat during sea trials.

All Sea Trial instrumentation and equipment must be furnished and operated by the Contractor. Trial instrumentation, where applicable, must not replace the boat's instruments (i.e. engine tachometer, pressure gauges, and thermometers). The Contractor must furnish all necessary hardware and fittings and must install the measuring devices. After satisfactory completion of the trials, all instrumentation must be removed and all systems restored to their original condition. The Contractor must provide two (2) copies of the calibration data report certifying the accuracy of the instrumentation for the tests and include it in the technical publications (see section 4.1).

The Contractor must carry out the following trials:

5.2.1 **SPEED TRIALS** - The speed trials must be done over a certified measured course at least one (1) nautical mile in length. Two (2) runs must be made over the course, one in each direction with speeds for the two (2) runs averaged. The distance covered for the speed trial may be measured by a Global Positioning System (GPS) vice being conducted over a certified measured mile course.

5.2.2 ENDURANCE TRIAL - The boat must operate at maximum speed for a minimum of ten (10) minute intervals in the Fully Loaded Condition over one (1) hour period considering the break in procedures of the equipment. During the endurance trials, it must be demonstrated that all parts of the propulsion system are in full operation. All systems must be operated to check for proper lubrication, control and alignment. Fuel consumption must be recorded for the one-hour trial.

5.2.3 ASTERN PROPULSION - The boat must be operated and maneuvered using astern propulsion to establish the astern performance. During the backing performance tests the throttles must be set to provide 1/3 of the rated engine horsepower. In order to demonstrate astern performance of the engines in an emergency stop and to test the strength of the foundations, the engine must be subjected to two stops from full power ahead at maximum speed to dead in the water using reverse thrust. Time required to perform this trial must be recorded.

5.2.4 STEERING GEAR - Tests must be conducted on the steering gear to demonstrate the adequacy of the steering system under all operations. Maneuvering tests must be performed to ensure that the boat meets the stated requirements. Maneuvering trials must be conducted in the Normal Operating Condition and repeated in the Full Load Condition.

5.2.5 DECK MACHINERY – Tests must be conducted on the deck machinery to demonstrate the adequacy of the winch and boom davit system under all operations. Tests must be performed to ensure that the equipment meets the stated requirements. Maneuvering trials must be conducted in the Normal Operating Condition and repeated in the Full Load Condition and test to safe factor.

The Contractor must provide a Maneuvering Data Sheet for each boat and include this data sheet in the technical publications (see section 4.1). See Appendix A for a sample Maneuvering Data Sheet.

The Contracting Authority and theTechnical Authority must be notified, no less than, two weeks prior to sea trials. The Contracting Authority and the Technical Authority reserves the right to witness or decline attendance of sea trials. Absence of the Contracting Authority and the Technical Authority at sea trials does not relieve the Contractor of its responsibility to conduct and record sea trials. Sea trial results will be forwarded to the Technical Authority prior to delivery of the boat.

At the conclusion of sea trials the boat must be thoroughly cleaned and inspected. Outboard engine cooling systems must be flushed through with fresh water, batteries must be disconnected and the Contractor must fill the fuel tanks to capacity. The Contractor must repair any damage to the boat or ancillary equipment resulting from sea trials, to the satisfaction of Canada.

5.3 FINAL INSPECTION

Final Inspection must not be performed until all tests have been satisfactorily completed with data available for review. The boats must be ready for delivery in all respects, except for final preparation for shipment. The Contractor must provide personnel, as required, to resolve questions and to demonstrate equipment operation maintenance accessibility, removal and installation. The Contractor must document the results of the Final Inspection and furnish these results to all parties (Contracting Authority and Technical Authority); a hard copy of the trial results must also be shipped with the deliverables for each boat. Where applicable, serial numbers and other identifying information must be recorded for each boat and engine and supplied to the Contracting Authority and the Technical Authority.

5.4 ACCEPTANCE

Upon delivery, the Technical Authority will conduct the final acceptance inspection. The Contractor must repair any damage to the boat or ancillary equipment resulting from shipping, to the satisfaction of Canada.

5.5 TRIAL RECORDS

The Contractor must maintain records of all testing for the boat for a minimum of two (2) years. The Contractor must prepare a testing check sheet that certifies that each test has been completed. The check sheet must indicate the actual weight of the boat in Light Condition. This check sheet must be included with the deliverables of the boat.

6.0 FABRICATION

Unless stated otherwise all components, equipment and material must be Contractor supplied.

6.1 STRUCTURAL INTEGRITY

All structures and components (hull, deck, collar, console, seating, cabin, etc.) must be of sufficient strength to withstand, when in the Fully Loaded Condition, the lateral and vertical impact-loading that equates to the conditions of the operational profile and mission requirements.

6.2 MATERIALS – GENERAL

6.2.1 ENVIRONMENTAL EXPOSURE - All materials must be corrosion resistant and suitable for use in a salt-water environment as detailed in the Environmental Conditions portion of the performance requirements. All materials normally subjected to sunlight must resist degradation caused by ultraviolet radiation.

6.2.2 DISSIMILAR METALS - Direct contact of electrolytically dissimilar metals is not allowed. Electrolytic corrosion must be prevented by insulating dissimilar materials from each other with gaskets, washers, sleeves, or bushings of suitable insulating material.

6.2.3 ALUMINUM - Aluminum alloy 5086-H112 or 5456-H111 must be used for extruded shapes and welded tubing and pipe. Non structural items of trim and outfit such as hatch frames, castings, and hardware items may be of other aluminum alloys suitable for commercial saltwater marine use.

6.2.4 STAINLESS STEEL - Stainless steel type 316L or 316 must be used for all stainless steel applications except as noted. Alloy 316 must not be used in any welded components.

6.2.5 GLASS REINFORCED PLASTICS and RESINS: Good lamination practises required throughout, eg. overlap distances, resin control, air removal from laminates, laminate repair and preparation for subsequent laminations and part bonding / secondary bonding. NOTE: Vessel Particulars may specify upgrade materials.

6.2.5.1 Minimum laminating material specification must include gel coats and skin-out of isothalic resins. Vinylester Resins as per 13.3 resins. No DCPD (Dicyclopentadiene) resins are to be used.

6.2.5.2 Fibre materials to be standard mat / rovings, or `stitch' combined materials, some of which may use Carbon or Kevlar strands. NO 'chopper' materials to be used in the hull. (note: various parts and compnenets of the vessel (such as hatch frames are laid up with a choper gun)

6.2.6 All materials and equipment must be stored installed and tested in accordance with the manufacturer's guidelines, recommendations and requirements

6.2.7 FASTENERS

6.2.7.1 All fasteners must be of corrosion resistant materials.

6.2.7.2 Cadmium plated parts and fasteners, including washers, must not be used.

6.2.7.3 The bonding strap should be stainless steel. Alloys containing copper should not be used in any location.

6.2.7.4 No fasteners must be directly threaded into GRP. Metal backing plates must be used.

6.2.7.5 Where nuts will become inaccessible after assembly of the vessel, nuts must be captured to allow reassembly and prevent backing off. Unless otherwise specified, self-locking nuts must be installed to prevent loosening of bolts due to shock and vibration.

6.2.7.6 Fasteners in deck traffic areas must be flush-mounted to eliminate tripping and snagging hazards.

6.2.7.7 All GRP composite penetrations must have their exposed inner core areas protected / coated to prevent deterioration or de-lamination of the core.

6.3 CONSTRUCTION PROCEDURES

The Hull and cabin must be fabricated using GRP composite construction as per the requirements quoted in Construction Standards of this TSOR.

6.4 MAIN HULL AND APPENDAGES

6.4.1 HULL FORM - Hull shape must not impede water flow to the propulsion and must direct spray and waves away from onboard personnel.

6.4.2 WATERTIGHT AND TANK BULKHEADS - The hull design must have a sufficient number of watertight compartments that will allow for adequate stability, and if more than one watertight compartment, each watertight compartment must have its own designated pumping system.

6.4.3 STOWAGE - Weather tight stowage for small items of equipment must be provided in void spaces beneath seats, and where practicable, inside console(s). Include mission-related equipment as well as that defined in the Canada Shipping Act, Small Vessel Regulations and Annex 2 of International Maritime Organization (IMO) Resolution A. 656 (16). Stowage compartments must be

secured by positive means, operable by gloved or insensitive hands. All stowage compartments must be accessible by key or padlock. The stowage locations must be capable of being fastened and easily opened when access is needed.

6.4.4 PAINTING AND PRESERVATION - Fiberglass components must have a colored gel-coat finish per Appendix B for the Science sector boat. Prior to delivery, the Contractor must ensure that all exposed aluminum is free of cosmetic blemishes, including construction marking, grinder marks, scratches, gouges and stains. Underwater hull must be covered with an anti-fouling paint system, approved for use in Canada and applied to a thickness as recommended by the paint manufacturer.

6.5 PROPULSION SYSTEMS

6.5.1 INSTALLATION AND ALIGNMENT - The engines must be installed in accordance with the engine manufacturer's recommendations. The use of engine manufacturer's approved accessories and equipment is required except for outboard motor control cables, which must be heavy duty Morse red-jacket or equivalent. Equipment and components must not be used on the boat that would, in any way, void the engine manufacturer's warranties.

6.5.2 WARRANTY - All components of the propulsion system must be warranted by the original equipment manufacturer.

6.5.3 GASOLINE OUTBOARDS - Propulsion must be Government Supplied Materiel (GSM) dual E-Tec 225 HP outboard motors. The Contractor must supply and install new stainless steel propellers suitable to meet operational requirements keeping in mind the port side is to be counter rotating. The Contractor must supply and install the controls for each outboard being installed.

6.5.4 All control cables, electrical wiring for the motors, and steering hydraulic hoses, are to be run through PVC pipes, from 2 to 3 inches in diameter. Pipe runs under the deck and in external UV resistant plastic pipes (LOOM). These pipes are to be installed in such a manner as to ensure that no cable is immersed in water.

6.6 STEERING SYSTEMS

6.6.1 GENERAL - The boat must be fitted with a hydraulic steering system such as the Sea Star system from Teleflex or equivalent.

6.6.2 HYDRAULIC HOSES - Hoses must be of sufficient size and length to prevent pulsing. Hoses must be suitable for use in an exposed marine environment complete with stainless steel fittings.

6.6.3 STEERING WHEEL - The wheel/console connections must be of robust construction to eliminate fore and aft or lateral movement of the wheel/steering shaft fixture. The steering wheel must be a robust design suitable for severe heavy-duty applications especially during rough water operations with no flexing of the wheel.

6.7 ELECTRICAL SYSTEM

6.7.1 GENERAL - The electrical system design, component selection and installation must meet TCMSB TP 1332. All electrical equipment and hardware must be installed in accordance with the manufacturer's specifications. All fitted electrical equipment must be capable of operating simultaneously with all fitted electronics equipment without causing interference to any electronic equipment or to the magnetic compass.

6.7.2 BATTERIES & SWITCHES

6.7.2.1 Battery switches must be recessed to prevent snagging or accidental switching. Battery compartments must be watertight and fitted with a suitable means of gas venting.

6.7.3 POWER DISTRIBUTION

6.7.3.1 **CABLING SELECTION** - Cables for all portions of power and lighting must be properly sized for electrical loads, marine grade, tinned boat cable.

6.7.3.2 **CABLING INSTALLATION**

6.7.3.2.1 Cables must be grouped into wiring harnesses wherever possible. All wiring harness must be routed below deck.

6.7.3.2.2 Cabling / conductors passing through watertight boundaries, decks, bulkheads or other exposed surfaces must be installed to maintain watertight

integrity of the structure. Cable entry into watertight enclosures must be through watertight marine glands of suitable size. All electrical equipment must be readily accessible for performing maintenance.

6.7.3.2.3 All below deck cabling must be through Polyvinyl Chloride (PVC) conduit pipe.

6.7.3.2.4 Cabling / conductors passing through bulkheads, decks, or other structures must be protected against chafing by the use of abrasive resistant grommets.

6.7.3.2.5 Routing cables through foamed spaces must be avoided wherever possible. Cables that must be routed through foamed spaces must be run in PVC conduit pipe. The pipe must be arranged in a manner that prevents water from becoming entrapped in the pipe.

6.7.4 NAVIGATION LIGHTING – The design of the fixtures must resist the effect of vibration and moisture and must be provided with adequate protection from damage caused by extreme working conditions. The navigation lights must be mounted so they do not interfere with the operator's line of site and conform to the Canada Shipping Act, Collision Regulations. The sidelights must be permanently mounted and wired on the cabin sides; the aft all around light or masthead light may be on a retractable or fold down mast.

6.8 NAVIGATION SYSTEMS

6.8.1 GENERAL – The Contractor must supply and install the following electronics. All antennas must be mounted on cabin top with fold down connections for road travel. All cable penetrations must pass through a watertight gland.

6.8.1.1 Compass is a Ritchie SS-5000W Super Sport Flush Mount compass or equal – mounted in the Operator's console. If the suggested compass is not available, the Contractor must supply and install at a minimum a 4-inch diameter damped card magnetic compass. Non-white (red or green) lighting connected to the 12 volt DC electrical system. System must be supplied with its own waterproof marine-grade dimmer switch. Compass

must be adjustable for deviation. (see section 6.8.2). Contractor must supply deviation card upon completion of boat sea trials.

6.8.1.2 The system provided must be equipped with licensed chart card information. Typical system used - Raymarine C120 Multifunction Navigation Display with 12.1" Sunlight Viewable Color display, model E02022 or equivalent. The system chosen must be able to interface with Regulus II BSB charts.

6.8.1.3 RD24-24"High Performance 4KW Raydome Antenna E-52067 with 15m cable

6.8.1.4 Raymarine Raystar 125 GPS Sensor E32042 Navionics Chart for the appropriate areas.

6.8.1.5 Licensed charts for the area of operation; charts must be compatible with the system installed. Information must be provided by the National Technical Authority prior to delivery of the boats.

6.8.1.6 ICOM IC M604 VHF DSC radio. Complete with loud hailer/intercom function plumbed to Radio.

6.8.1.7 Antenna, specification is Comrod AV60P 8 and Shakespeare 4187 HD ratchet mount.

6.8.1.8 Whelan 295SLSA6 Loud Hailer, or equivalent.

6.8.1.9 Raymarine E66008 in Hull Depth Adjustable Angled in Hull Transducer

6.8.1.10 Raymarine DSM300 Digital Sounder Module, model E63069

6.8.1.11 Raymarine Smart Heading System for Pathfinder model E12102 Gyro Stabilized Fluxgate Compass System

6.8.1.12 Clarion DXZ435 CD AM/FM stereo with two (2) 6.5" waterproof speakers

6.8.1.13 Horn – The Contractor must supply and install an electric horn that meets the requirements of the Canadian Standards Association (CSA) Collision Regulations. The horn must be operated by a spring-loaded switch located on the operator's console.

6.9 CONTROL AND MONITORING SYSTEMS

6.9.1 Gauges - Dimensions and Ergonomics: Unless otherwise specified, gauges must be the latest available or as supplied by the outboard motor manufacturer (see Section 16.0). Gauges must be installed so they are readily visible by the operator while operating the boat.

6.9.2 Gauges – Illumination: All gauges must be backlit with an adjustable dimmer. Lighting for gauges and lighting for compass must use separate dimmers. Lighting must be suitable for night operation and not interfere with the operator's vision when running the boat.

6.9.3 Control Requirements: Propulsion control system installation must include single-lever combined engine control, for each engine, to be located at the operator's position on the starboard side of the control station. Controls must conform to the outboard motor manufacturer's recommendations for commercial use and be Contractor supplied.

6.10 PIPING SYSTEMS

6.10.1 Flexible Connections: where flexible connections are required for steering and fuel systems, suitable hose with detachable reusable type fittings must be used. Hose barbs with clamps and swaged-on fittings will be accepted. However the preferred method of connection will be permanently crimped reusable type fittings.

6.10.2 Fittings and clamps must be stainless steel. Bolts used in steel must be corrosion resistant steel such as 316. Bolts used in bronze must be Monel or silicon bronze.

7.0 PACKAGING AND SHIPPING

7.1 SHIPPING AND DELIVERY

Prior to shipping, the boats must be secured on their respective trailers, cleaned, preserved and covered in accordance with this section. All areas of the boats must be cleaned prior to covering for final shipping. Bilges must be dry and free of oil and debris and the fuel tanks must be full with fuel stabilizer added. The propulsion system must be preserved in accordance with the manufacturer's recommendations for storage of up to one year in an environment that will be subjected to freezing temperatures.

The batteries must be disconnected. A durable warning plaque must be wire tied to the steering wheel indicating that the boat has been preserved for shipping and storage and must not be started until the propulsion machinery has been reactivated. All contact points with the boats must be padded.

8.0 PHYSICAL CHARACTERISTICS

8.1 Length overall - between 8.75 and 9.25 meters.

8.2 Breadth overall - between 2.9 and 3.2 meters.

8.3 Maximum draft (outboard motor lowered) - between 0.80 and 0.90 meters.

8.4 Maximum draft (outboard motor raised) - between 0.70 and 0.80 meters.

8.5 Maximum freeboard (from top of collar at amidships, in normal load condition) 0.80 meters

8.6 Maximum height of collar above deck 0.80 meters

8.7 Displacement (in normal load condition) between 4400kg and 4800kg.

8.8 Normal load conditions: Crew of 3 = 300kg
Fuel =720 liters to 820 liters
Equipment & supplies = 500kg

Note: Fuel system must be fabricated, supplied and installed as per TCMSB TP 1332, section 7.0 refers.

9.0 OPERATIONAL PERFORMANCE

9.1 Unless otherwise stated, performance must be for conditions of zero sea state and no wind, in salt water with full load and complement. The boats must be designed and constructed for ease of maintenance and repair, long life, and is to be easily supportable in the location of the delivery address of boats (Annex B refers) by local commercial facilities and suppliers. The boats must be expected to have a service life of at least 7 years, with an expected usage of between 300 and 500 hours per year.

9.2 Maximum speed: 35 knots - 40 knots.

9.3 Minimum speed: 20 knots in sea state 6 with 35-knot wind.

9.4 Endurance: 30 knots for 6 hours

9.5 Range: 200 nautical miles with 10% reserve at 25-knot minimum speed.

9.6 Steering:

- Capable of steering 15° from heading, in sea state 6, with seas from any direction;
- Steer and maneuver effectively at 3 knots in sea state 6;
- Maintain course, made good over ground, when proceeding at 3 knots with relative cross wind of 35 knots;
- Capable of turning in its own length in sea state 6; and
- Capable of steering effectively in sea state 6 with winds of 30 knots while towing a 15 ton (displacement) vessel at 5 knots.

9.7 Beaching:

- Capable of beaching on soft (sand, earth or clay) surfaces at speed of up to 5 knots without damage to the hull.

- Capable of beaching on hard (stone or concrete) surfaces at speeds of up to 3 knots without damage to the hull.

9.8 Depth under Keel:

- Operate fully in depths of 1 meter with motor lowered.
- Basic maneuvering in depths of 0.80 meters with outboard motors in the partially raised position.

10.0 ENVIRONMENTAL CONDITIONS

Capable of operating in day or night in the following conditions;

10.1 Average ambient air temperature range: -15° Celsius (C) to + 30°C

10.2 Average water temperature: 0ºC to +20°C.

10.3 Wave heights of 4 meters to 6 meters (WMO Sea-State 6).

10.4 Wind speeds of 30 knots minimum.

10.5 Required to operate safely in ice infested waters, (some minor damage to the boat, not affecting stability or buoyancy is acceptable).

10.6 Boat operates in freezing spray or freezing rain with accumulations of up to 6.0 mm while maintaining stability while allowing for safe transit in Beaufort force 7.

11.0 CABIN CONFIGURATION

11.1 GENERAL NOTES

11.1.1 SEATING: : Seating must be provided in the wheelhouse via two (2) Fixed Shock mitigating seats adjustable front to rear and height

adjustable, two-foot rest, adjustable backrest and folding armrests. Shock Mitigating Seats must have adjustable ride to accommodate variable personnel characteristics. The other two (2) seats must be knockdown seats, a 1 (one) x 2-person knock down seat on the port side of the back bulkhead (inside wheelhouse) will meet the requirements. The Wheelhouse must be configured to provide room to accommodate four (4) personnel in seated position comfortably, all with full vision out of wheelhouse and all with quick access out of wheelhouse via large rear sliding door and pilot sliding doors at each side of wheelhouse. A forward watertight access hatch must also be fitted in the cuddy cabin top. Fabric of the upholstery must be rugged Naugahyde or equivalent and must be resistant to tearing, puncture, and environmental conditions and moisture. All four (4) seats must be Contractor supplied and installed, seat locations must be clearly identified to and approved by the Technical Authority.

11.1.2 CABIN LOCATION: Provision must be made for safe passage of personnel without necessity to stand or walk on the sponson. The cabin is to be positioned in order to **maximize space on the aft deck.**

11.1.3 CABIN ARRANGEMENT: The layout of the console and/or cabin must take into account ergonomic considerations, with easy viewing and access to all critical instruments and controls. The cabin deck to be covered with anti-fatigue matting. A marine Head is to be Contractor supplied and installed in the cuddy cabin. Two (2) bunks must also be fitted in the cuddy cabin. The cabin deck to be equipped with several storage spaces as well as provide easy access to the forepeak.

11.1.4 CONSOLE INSTRUMENTATION: Operators console must be fitted with all appropriate gauges as recommended by the propulsion-system manufacturer, as follows:

11.1.4.1 Tachometer for each engine

11.1.4.2 Fuel gauge for each tank

11.1.4.3 Ammeter for each alternator

11.1.4.4 Tilt/trim gauge for each out-drive

11.1.4.5 Oil pressure gauge

11.1.4.6 Oil level gauge

11.1.4.7 Hour Meters for Outboard motors

11.1.4.8 Cooling water temperature gauge

11.1.4.9 Water Pressure gauge

11.1.4.10 Battery condition/ voltage meters for each battery

Note: The list of gauges is for example only and is not meant to be specific. The contractor must design the console to incorporate the gauges and instruments they recommended for effective operation of the boat. The government will supply twin (2) 225 HP Evinrude E-Tec outboards (GSM), The Contractor must supply and install the controls and gauges that are recommended by the suppliers for operation of these engines. Hour meters must be installed.

11.2 CABIN REQUIREMENTS

The cabin must be sized to accommodate and provide seating for a four (4)-person crew, two fixed seat and two knockdown (or 1 knockdown with seating for two) seats. The cabin must be fully enclosed with access through a weather tight door in the aft bulkhead (the opening must be situated as far as possible to the starboard side), watertight door in fwd bulkhead and weather tight slide pilot doors (one Port & Starboard). The cabin must be of such a design that the operator will have an unobstructed view from directly forward to 22 ½ ° abaft the beam on the port and starboard sides. The enclosed Wheelhouse door arrangement as detailed above is for four wheelhouse doors; 2- side pilot doors, 1- main rear doors (all with windows and slider operated) and one forward hinged (water tight when closed) door for access to the forward deck area. Visibility as detailed above is full 360 degree from large safety glass windows in front, sides and rear of wheelhouse. Cabins must be heated and a means must be provided to reduce window fogging and icing. Two (2) electric windshield wipers with pantograph arms and a wiper washer system are to be installed one on each fore window. The windshield wipers are to be activated individually by a switch - 4 positions (stop-slow-fast-intermittent) - located in the pilot house.

12.0 CONSTRUCTION STANDARDS

12.1 The RHIB constructed under this TSOR must be fabricated in accordance with the current TCMSB TP 1332 “Construction Standards for Small Vessels” and where applicable the American Boat & Yacht Council (ABYC).

12.2 The RHIB constructed under this TSOR must be fabricated of GRP composite construction.

12.3 The Contractor must construct the RHIB as per this TSOR and where this TSOR interferes or contravenes the above standard; the above TCMSB TP 1332 standard will take precedence.

12.4 The Contractor must arrange for Technical/Contracting Authority site visits, during all phases of the RHIB construction. The site visits are required to insure that all boats constructed under this TSOR comply with each standard addressed in this TSOR. The Contractor must supply an electronic (AutoCAD DWG format) copy and two hard copies of all drawings for the boat design to the Technical Authority two weeks prior to Sea trials.

12.5 The Contractor must supply a signed letter insuring the proposed RHIB complies with TCMSB TP 1332 and a completed Small vessel Compliance Form (available from the TCMSB web site), to ensure compliance with the current TCMSB requirements.

12.6 Electrical systems for the RHIB must be in accordance with TCMSB TP 1332 Section 8 “Electrical Systems”.

13.0 CONSTRUCTION REQUIREMENTS

13.1 QUALITY CONTROL DURING CONSTRUCTION

The Contractor must provide documentation to demonstrate that their company has a current system that incorporates a formal mechanism that deals with Quality Control practices and procedures. The Contractor must provide an outline on how they propose to use this system in the construction of the boat being built under this specification.

13.2 GENERAL

13.2.1 Structural Strength: All structural and related components (hull, deck, collar, console, seating, cabin, etc.) must be of sufficient strength to withstand lateral and vertical impact loads associated with the operational requirements.

13.2.2 Launching: Boat must be capable of being launched, recovered and transported by trailer.

13.2.3 Builder’s plate to identify National Asset Code as identified in Annex B.

13.3 HULL

Boats must include the following:

Rigid hulls must be constructed of vinyl ester glass-reinforced plastic. All materials used in the hull construction must be fire-retardant or non-combustible.

The deck and hull must be constructed of similar materials. The deck must have a suitable non-skid surface.

13.3.1 DECK: Decks must be self-draining, by means of non-return freeing ports or similar. The deck above the watertight compartments must be bolted for easy removal to allow access for repair of buoyancy compartments beneath.

13.3.2 TIE DOWNS: Flush mounted deck tie downs will be fitted on the forward deck area for the securing of deck cargo. (Minimum of 4 required).

13.3.3 STOWAGE: The Contractor must provide a watertight compartment for safe stowage of equipment and accessories. Arrangements must be provided for safe, secure and accessible stowage of an anchor and cable, paddles, and other equipment.

13.3.4 BEACHING SHOE: A high-density protective shoe of stainless steel or equivalent composite must be fitted the full length of the keel, to protect against damage from grounding or similar hazards. This shoe must not detract from performance or sea keeping capabilities, and it must be capable of withstanding the horizontal and vertical impact loading associated with the boats operational requirements. (See section 9.7 Operational Performance - Beaching)

13.3.5 TOWING/TRAILERING: A bow eye or U-bolt arrangement must be incorporated into the construction of the stem, suitable for towing the boat at a speed of 5 knots in calm water in the normal loaded condition, on an even keel without damaging the boat or causing undue chafing of the towline. This bow eye must also be suitable for trailering purposes.

13.3.6 OUTBOARD MOTOR CRASHBAR: A reinforced aluminum outboard crashbar bracket constructed of 5086 aluminum alloy is to be fitted to protect the outboard motors. The crashbar must be removable if it obstructs outboard motor removal.

13.4 COLLAR

13.4.1 Collars must normally be inflatable type with at least 5 separate chambers of approximately equal volume, each fitted with a suitable inflation system and over-pressure relief valves calibrated to manufacturer's specified Pounds per Square Inch (PSI). Inflatable collar fitted must be constructed of material that meets the criteria for strength, elasticity, resistance to wear and longevity.

The material as a minimum must be Hypalon with a weight between 1500 to 1670 Grams per Square Meter (GSM).

13.4.2 Collars must be interchangeable and have a diameter of 24 inches so that custom fitting of spare collar is not required.

13.4.3 Inflatable collars must be attached to the hull using mechanical fasteners in a manner that allows the collar to be easily removed for repair or replacement. The use of screws and lag bolts or glue-on type collar is not acceptable.

13.4.4 Collar must be supplied with two pairs of step treads installed.

13.4.5 Inflatable collars must be provided with protective wear strips all around. At least three extruded neoprene rubber, or equivalent, rubbing strakes (50mm - 75mm wide) must be glued along the entire length of the outboard side of the collar to provide protection against abrasion and puncture.

13.4.6 Grab lines of nylon braided rope construction must be fitted along the collar on both the port and starboard sides to provide access from both within the boat and for persons in the water. Grab lines must be mounted on the centerline of the collar, by means of a lacing cuff (not by D-Ring attachment).

13.4.7 A repair kit must be provided for inflatable collar. (see section 14.10.2.1)

14.0 OUTFITTING

14.1 TOWING

14.1.1 Sufficient barrier protection must be provided to protect control station from potential recoil of towline.

14.1.2 A cruciform towing post must be fitted aft (4000 pound tow capacity minimum) and a removable cruciform tow post (4000 pound tow capacity minimum), fitted toward the bow. The tow posts to be stamped with the Safe Working Load (SWL) of each post, and the paint must be highlighted. Contractor must supply SWL certificate for each post.

14.2 ELECTRICAL

14.2.1 The electrical system must meet TCMSB TP 1332 and ABYC Standards and be completely waterproofed and easily accessible, incorporating a waterproof breaker panel with a minimum of 10 circuits fitted. The Contractor must ensure that the breaker panel has 10% expansion room or a minimum of 2 spare breakers (whichever option is greater). “As Fitted” drawings to be supplied.

14.2.2 Twelve Volt (12V) DC distribution system must be provided to power the engine starting and boat service loads including:

- Navigation lights;
- Navigational equipment;
- Instrumentation;
- Electronics; and
- Communications.

14.2.3 Four (4) marine quality 12V power outlets must be suitably located throughout the vessel. Two of the 12V power plugs must be installed on or near Operator's console.

14.2.4 One (1) 600 Watt 12V DC (with converter to 115V AC) accessory plug to power a laptop computer. The Contractor must ensure that this plug can still operate when strictly on the AC shore power (See Section 14.3).

14.2.5 Batteries & Charger:

14.2.5.1 The boat is to be equipped with a system of three type M30MF deep-cycle batteries (2 for the motors and 1 for accessories) with a selector switch and connected in accordance with the motor manufacturer’s technical specifications.

14.2.5.2 Batteries must be marine grade glass mat or gel type maintenance free to eliminate leakage, and a minimum 1000 deep-cycle cranking amps.

14.2.5.3 A battery charger is to be supplied and installed on the boat. It must be used to charge both battery banks and the generator battery when the boat is on shore power.

14.2.6 Bilge Blower: The boats must be fitted with a 12V DC bilge blower system in accordance with TCMSB TP 1332 “Construction Standards for Small Vessels”. The bilge blower system must be controlled by a separate watertight switch and fuse located at the operator's console.

14.3 SHORE POWER SERVICE

14.3.1 A shore power connection must be fitted complete with a marine grade service rated 50-ft shore power cable, capable of supplying 120V AC, 30 ampere, single-phase service.

14.3.2 The boat's shore power receptacle must be a marine-style locking 30-amp waterproof male receptacle in a location that is accessible with all hatches closed.

14.3.3 Shore power must be connected to an AC distribution panel on the boats. Each AC circuit must have its own breaker. This distribution panel will supply the following:

- Battery charger;
- One domestic plug approved type, 15 A in cabin;
- One domestic plug approved type, 15 A outside cabin;
- One cabin light; and
- Two spare circuits.

14.3.4 Cable Installation: Cables and conductors must be supported with clamps or straps at least every 18 inches on horizontal runs and every 14 inches on vertical runs. Cable runs in PVC fire retardant LOOM as deemed acceptable by TCMSB TP 1332 requirements.

14.4 HEATING

The heating system must be a Wabasto, or equivalent Diesel furnace configured to perform cabin heating and window defogging with optional inline speed controlled fan for forced air supply. The Contractor must calculate the required size of the total space being serviced by the heater and use this measurement when ordering the system. The Contractor must install the system as per the manufacturer's recommendations.

14.5 LIGHTING

14.5.1 Backscatter of console lights must be minimized in the design. In all cases, progressive marine grade dimmers must be fitted wherever practicable, with the capability of dimming engine monitoring gauges and other indicators separately from compass illumination.

14.5.2 Boats must be fitted with four (4) marine grade floodlights suitable for illuminating forward and aft deck spaces. (The ITT Halogen

Floodlight, Model 45900-0000 Bracket Mount, Trapezoidal beam, 12 volt, 15 cm x 10 cm, meets this requirement)

http://www.xylemflowcontrol.com/marine-and-rv/searchlights-floodlights/45900-series-45900-floodlight.htm

14.5.3 Navigation lighting must conform to CSA Collision Regulations.

14.5.4 Fitted searchlights: two (2) required as a minimum and must have remote control slew/tilt/focus capability, allowing 360º coverage.

14.5.5 Fitted searchlights must produce at a minimum one million Candelas each.

14.5.6 Mounting must minimize interference with operator's vision.

14.5.7 Fixtures must be designed to resist the effects of vibration and moisture and must be protected from damage while lying alongside or while underway.

14.5.8 Handheld Searchlights: one (1) required as a minimum producing 1 million candelas at 12 volt supplied. Two exterior search light power outlets, one aft and one forward, weather tight and corrosive resistant marine grade.

14.6 PUMPING AND DRAINAGE

14.6.1 Electric bilge pump with 2000 gallons per hour (gph) capacity must be fitted in each watertight division as well as a fixed manual operated diaphragm type bilge pump. The bilge pump must be located so that it takes suction from the lowest point of the hull. Piping will allow the bilge pump to discharge directly overboard. An automatic control must be fitted that turns on the electric bilge pump when water is present in the bilge. The electric bilge pump control switch must be located on the operator's console, with settings for 'on', 'off' and 'automatic' operation. An indicator light and an audible alarm must be installed at the console that lights when the bilge pump is operating. Bilge pump(s) must be wired direct to battery, so that it is constantly active as per TCMSB TP 1332 requirements.

14.6.2 Hull drainage - a non-corrosive threaded plug must be provided in the lowest point to drain the hull when out of the water.

14.6.3 Inboard wash down system (STRIGHT-MACKAY, Jabsco Pump, High Speed, 378 gallons per minute or similar)

14.6.4 Valves and handles must be bronze and must be located where they are readily accessible for operation, maintenance or removal.

14.7 RADAR ARCH

Radar Arch must be fabricated and installed above the cabin. The arch must be constructed so that the radar, antennae, lights and other fittings can be mounted with minimal effort. All wiring penetrations in the cabin must be made water tight using TCMSB approved watertight glands. All penetration must be hose tested upon completion for water tightness. Acceptance based on no water penetrating the interior of the cabin.

14.8 COLOR

14.8.1 The standard color of the hull, deck, collar, and console of the boat will be in accordance with Appendix B - FC 08-2007 : CANADIAN COAST GUARD FLEET IDENTITY COLOR STANDARD. Upholstery on the seats must be grey. All exposed aluminum surfaces must be matte white and outer surfaces of cabin must be white.

14.9 LIFESAVING EMERGENCY EQUIPMENT

14.9.1 The following items must be provided with appropriate stowage / securing arrangements (as appropriate for each item). All fittings, Contractor supplied, must be heavy duty, corrosion resistant 316 stainless steel fittings. All items must be readily accessible (the foot pump and the repair kits must be stowed in a stowage locker)

14.9.2 The Contractor must supply and outfit the boats with the following items of emergency equipment:

14.9.2.1 Collar patch kit (for inflatable collar);

14.9.2.2 Foot pump (bellows type, for floatation collar) and a 12V High volume pressure pump;

14.9.2.3 Anchor support installed on the fore deck;

14.9.2.4 A water-resistant flashlight and a set of spare batteries;

14.9.2.5 Two (2) wooden paddles;

14.9.2.6 One extinguisher (Class 5BC, marine type);

14.9.2.7 Anchor (Fortress FX16 model or equivalent) with 200 feet of ¾” line and a 5 meter galvanized chain;

14.9.2.8 Sea anchor;

14.9.2.9 Four (4) 25-foot mooring lines;

14.9.2.10 Four (4) 6 inch diameter fenders;

14.9.2.11 First aid kit;

14.9.2.12 Air horn;

14.9.2.13 Buoyant heavy line of at least 15 meters;

14.9.2.14 Transport Canada approved radar reflector (Echomaster Davis);

14.9.2.15 RLS 406MZ beacon; and

14.9.2.16 Six (6) approved pyrotechnical distress signals among which at least 3 of type A, B or C.

14.10 DECK MACHINERY

A boom with winch will be installed and utilized for various scientific operations.

14.10.1 The Contractor must supply and install a boom davit with a capacity of 225kg just aft of the wheelhouse on the Port side. The mast must be tested, certified and stamped to this capacity. The mast jib must be adjustable in order to be able to lift objects 1 meter from the side of the boat. The boom must have locking device in both positions in or out by using a spring loaded pin at the bottom and the mast must be retractable. Metal backing plates in the deck and tube carrier must be installed to allow for the installation and easy removal of the davit.

14.10.2 The Contractor must supply and install a winch integrated with the Boom Davit. The Stress Free winch, NG Series Midi 1400 will meet this requirement (Or Equal). The winch will be supplied with wire rope loaded on the drum, 90 meters of 8mm Wire Rope Polycad / Combination Wire Rope.

14.10.3 The Contractor must supply and install QD 60Hz 5 Kw model ONAN generator, located as far aft as possible on the centerline athwartships. Easy access to this generator is to be provided for daily verification purposes, repairs and normal maintenance. A sea suction equipped with a valve, external strainer and a filter with a removable basket are to be installed and provide easy access to the generator cooling system. These components are to be of bronze and of the diameter required by the generator manufacturer. The generator will be mounted using bolts for ease of removal.

14.10.4 The generator will be powered by diesel fuel supplied by a 10 to 15 gallon tank that has been tested and certified. The tank is to be equipped with a remote closing valve, a level sensor and a level

gauge in the pilot house. The system is to be equipped with a marine type racor filter in accordance with the manufacturer's requirements.

14.10.5 Exhaust gas is to be evacuated through the aft transom and be equipped with a non-return system.

14.10.6 A remote control console is to be installed in the cabin that will be started by a type M24MF battery located and secured near the generator.

14.10.7 A separate battery, charging circuit, and switch are required for the generator.

15.0 PROPULSION

15.1 GENERAL

15.1.1 Outboard motors must be Government Supplied Materiel (GSM) twin (2) 225 HP Evinrude ETEC Outboard Engines and must be Contractor installed.

15.1.2 Kill Switch - Engine package must incorporate an automatic shutdown feature (kill switch), Contractor supplied and installed.

15.2 FUEL SYSTEMS

15.2.1 The RHIB must include the following;

15.2.1.1 The complete fuel systems must be supplied, installed, labeled and tested in accordance with Section 7 of TCMSB TP 1332;

15.2.1.2 The fuel system must include two (2) Racor filter/separators suitable for fuel supply to the twin gasoline outboard motors;

15.2.1.3 All fuel valves must be readily accessible and labeled as per TCMSB TP 1332;

15.2.1.4 Fuel filling pipes must have a standpipe that stands proud of the deck at least 2 inches to avoid contamination entering or recessed fills in drainable covered locker vented overboard in the bow area. Fill pipes must be designed to catch fuel from over filling or blow back, so that the fuel does not enter the vessel as per TCMSB TP 1332 requirements;

15.2.1.5 Remote fuel shutoff valves must be fitted, remote from the fuel tanks and engine compartment. Labeled as per TCMSB TP 1332 requirements;

15.2.1.6 All fuel tanks are to be equipped with an anti-syphon valve installed on each suction;

15.2.1.7 Fuel tank vent pipes are to be equipped with a non-return check valve; and

15.2.1.8 If the boat is fitted with more than one fuel tank they must have cross over valves which allow any motor to use fuel from any tank.

16.0 TRAILER

16.1 A trailer must be supplied and fitted by the Contractor for each of the boats as per the following requirements:

16.2 A trailer to fit the boat, must be provided by the Contractor, and must be welded galvanized construction and be rated at least 5% over the anticipated 'normal load' weight of the boat. The trailer must be certified commercial requirements in accordance with Department of Transport regulations for towing the vessel, and be constructed and equipped with the following:

16.3 Trailer to be equipped with axle bearing protection, grease nipple, and flush out kit if required

16.4 Brake and turn signal lighting, with 4-prong flat wiring connector. The lighting system must be submersible. (Note requirement for other connector if required for the equipment listed for trailer.)

16.5 Hydraulic surge type, jurisdiction compliant braking system.

16.6 Manual bow winch assembly with winch strap and non-corroding snap hook, bow chock, and swivel tongue jack, with wheel. The winch must be of adequate size to launch and recover the vessel and fitted with anti-reverse mechanism.

16.7 Heavy-duty 'stand-on' fenders and hitch to accommodate a 2-inch ball.

16.8 Rollers and-and wheel mounted spare tire and carrier, with lug wrench.

16.9 Class III weight distributing hitch compliant.

16.10 The Contractor must record the trailer sales and registration information and provide the information in the boat manual.

17.0 DELIVERABLES

17.1.1 Deliverables:

17.1.1.1 Manuals inclusive of reports, data sheets, etc. (see section 4.0, 5.0).

17.1.1.2 Test & Trial results and reports (see section 5.0).

17.1.1.3 Acceptance Certificates, i.e. life saving appliances, lifting appliances, engine test reports, calibration certificates.

17.1.1.4 Testing Check Sheet (see section 5.5).

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APPENDIX A

MANEUVERING DATA SHEET

TITLE: SEA TRIAL - ACCEPTANCE

ITEM	DESCRIPTION OF OPERATION/DATA RECORDING
1.0	**SHIP CONDITION:**
1.1	The following ship condition shall be recorded at dockside at the beginning and at the end of the Trial. a) Draft _____ b) Trim _____ c) Displacement _____ d) Condition of Vessels Tanks _____ e) List of heavy equipment (item, weight, location). _____
2	**AMBIENT CONDITIONS:** The following information on Data Sheet # 1 shall be recorded at the start of the Trial:

DATA SHEET # 1	
A) Date	
B) Ambient Temperature	
C) Average Depth of Water	
D) Water Temperature	
E) Sea State and Direction	
F) Wind Speed and Direction	
G) Barometric Pressure	

2.1	
2.2	Sea State and direction & wind speed and direction shall be recorded at the beginning and end of Items 3 & 4.
2.3	Demonstrate all control operations at 50% power from wheelhouse.
3.0	**PROGRESSIVE SPEED RUNS:**
3.1	Progressive speed trials shall be conducted at 25%, 50%, 75%, 90% and 100% power.
3.2	A speed run shall consist of two runs per RPM setting (one run in each direction). The mean achieved RPM shall be within 2 percent of the selected RPM. The difference in the mean achieved RPM between runs in opposite directions shall not be more than 2 percent. Trim tab settings shall be set before and be constant for each double run.
3.3	The ship shall approach the test area on the prescribed course at a steady propeller RPM for a sufficient distance to ensure that acceleration has ceased before entering the test area. Elapsed time and distance traveled shall be recorded for a run from marker to marker of the Measured Mile.
3.4	On finishing the measured run, the ships course shall be changed and the ship brought around to a reciprocal course far enough from the start of the test area to regain any speed lost on the turn before commencing measurements on the reciprocal run.
3.5	On completion of each group of two constant speed runs, the RPM shall be changed at once in order to give the boat sufficient time to attain the desired new speed before starting the next run.
3.6	No rudder movement shall be made during the approach and on the measured run.
3.7	During these runs, Data Sheet # 2 shall be completed.

TITLE: SEA TRIAL - ACCEPTANCE

ITEM	DESCRIPTION OF OPERATION/DATA RECORDING
4.0	ENDURANCE RUN AND CRASH STOP:
4.1	Maintain 100% power (RPM) and run for 6 hrs. Take readings and record every hour.
4.2	On completion of the endurance runs the " Crash Stop " shall be demonstrated. The vessel shall be decelerated by going to full power astern until the vessel "is " dead in the water ". The time and distance required to reach " dead in the water " shall be recorded on Data Sheet # 2.

DATA SHEET # 2	
A) RPM	
B) Initial Speed	
C) Vessel Initial Heading	
D) Time (from Full Power Astern	
to dead in water)	
E) Distance Covered	
F) Vessel Final Heading	

NOTE: No rudder movements shall be made during the maneuver. Stopping distance shall be estimated by the Master.

4.3 On completion of the crash stop the vessel shall complete a 5 minute astern run at 100% power (or maximum safe power at Master's discretion).

TITLE: SEA TRIAL - ACCEPTANCE

ITEM	DESCRIPTION OF OPERATION/DATA RECORDING

5.0 **STEERING GEAR:**

5.1 At full power ahead and astern, move the rudder in 5° increments from amidships to 35° port and return, and from amidships to 35° Stbd and return. Record actual rudder angle mechanical indicator and actual demanded on rudder angle Indicator.

DATA SHEET # 3

PORT PUMP	RUDDER MOVEMENT PORT														
FULL AHEAD	NOMINAL	5	10	15	20	25	30	35	30	25	20	15	10	5	0
	ACTUAL ACHIEVED														
	ACTUAL IS DEMANDED														
FULL STERN	NOMINAL	5	10	15	20	25	30	35	30	25	20	15	10	5	0
	ACTUAL ACHIEVED														
	ACTUAL IS DEMANDED														

DATA SHEET # 4

STBD PUMP	RUDDER MOVEMENT STARBOARD														
FULL AHEAD	NOMINAL	5	10	15	20	25	30	35	30	25	20	15	10	5	0
	ACTUAL ACHIEVED														
	ACTUAL IS DEMANDED														
FULL STERN	NOMINAL	5	10	15	20	25	30	35	30	25	20	15	10	5	0
	ACTUAL ACHIEVED														
	ACTUAL IS DEMANDED														

TITLE: SEA TRIAL - ACCEPTANCE

ITEM	DESCRIPTION OF OPERATION/DATA RECORDING

5.2 With the vessel at full power ahead and full power astern, move the rudder from 35° Port to 35° Stbd and from 35° Stbd. to 35° Port and then to amidships. Record the time required to complete each hard over.

DATA SHEET # 5		
HARD OVER RUDDER MOVEMENTS (PORT PUMP)		
	PORT TO STBD	STBD TO PORT
FULL AHEAD	EXPECTED TIME: _____ Sec. ACTUAL TIME: _____ Sec. HYD. OIL PRESSURE _____ bar g	EXPECTED TIME: _____ Sec. ACTUAL TIME: _____ Sec. HYD. OIL PRESSURE _____ bar g
	PORT TO STBD	STBD TO PORT
ASTERN	EXPECTED TIME: _____ Sec. ACTUAL TIME: _____ Sec. HYD. OIL PRESSURE _____ bar g	EXPECTED TIME: _____ Sec. ACTUAL TIME: _____ Sec. HYD. OIL PRESSURE _____ bar g

5.3 AUTOPILOT:

5.3.1 With the vessel traveling in a straight line at 50% power in calm water, turn the master select switch to the Pilot position. Make a 40 degree course change using the Red Arrow key. The vessel will settle onto course with one overshoot of 5 degrees or less. Repeat with the Green Arrow key.

5.3.2 a) Adjust the automatic pilot course demand within 5° of the ships heading and select Auto steering mode and observe the auto steering mode selector indicates active.
b) Head due North and adjust the course demand 180° Port of ships heading. Record time required to achieve new course and Port or Stbd overshoot. _____
c) Head due South and adjust the course demand 180° Port of ships heading. Record time required to achieve new course and Port or Stbd overshoot. _____

TITLE: SEA TRIAL - ACCEPTANCE

ITEM	DESCRIPTION OF OPERATION/DATA RECORDING

5.3 Cont.

DATA SHEET # 6	
FUNCTION	REMARKS
Auto mode selector Indicates" SELECTED"	
Time required to achieve course.	_____ Sec.
Port and Stbd system overshoot of set point.	Port _____ ° Stbd _____ °
Time required to achieve course.	_____ Sec.
Port and Stbd system overshoot of set point.	Port _____ ° Stbd _____ °

d) Observe that the auto pilot maintains ships heading for 5 minutes after each adjustment.

Return to normal operation:

CIRCLE TURNING:

All circles shall be carried out with 35° of rudder angle through a circle of 540°

The following circle turning maneuvers shall be conducted. Record information for each turn.

a) One circle to Port at 50% power.
b) One circle to Stbd at 50% power.
c) One circle to Port at 100% power.
d) One circle to Stbd at 100% power.

Each circle shall be commended from a steady course and speed. Alternate turns shall be made with opposite initial headings. Approaches shall be up or down tide with no change in power.

TITLE: SEA TRIAL - ACCEPTANCE

ITEM	DESCRIPTION OF OPERATION/DATA RECORDING

DATA SHEET # 7

FUNCTION	RECORD			
CIRCLE TURNING: Preliminary Information	Turn 1 _____RPM Port	Turn 2 _____RPM Stbd	Turn 3 _____RPM Port	Turn 4 _____RPM Stbd
Time For 540°				
Ship's Initial Heading				
Initial Speed				
Relative Wind Speed and Direction				
Estimated Diameter, m				
Time for 35° Rudder Angle				

TIME M-S	HEADING				REMARKS
	Turn 1 _____RPM Port	Turn 2 _____RPM Stbd	Turn 3 _____RPM Port	Turn 4 _____RPM Stbd	
0-0					Note time for 90° incremental changes in heading.
0-10					
0-20					
0-30					
0-40					
0-50					
1-00					
1-10					
1-20					
1-30					
1-40					
1-50					
2-00					
2-10					
2-20					
2-30					
2-40					

APPENDIX B

FC 08-2007 : CANADIAN COAST GUARD FLEET IDENTITY COLOR STANDARD

Fisheries and Oceans Canada / Pêches et Océans Canada

Canadian Coast Guard / Garde côtière canadienne

FLEET CIRCULAR - CIRCULAIRE DE LA FLOTTE

FC 08-2007	**CANADIAN COAST GUARD FLEET IDENTITY COLOR STANDARD**	CF 08-2007	**NORME DES COULEURS D'IMAGE DE MARQUE DE LA FLOTTE DE LA GARDE CÔTIÈRE CANADIENNE**
2007-04-10	*Ref: Federal Identity Program*	2007-04-10	*Réf : Programme de coordination de l'image de marque*

Purpose

This Circular is issued to update the current standard and clarify the responsibilities for the application of the Federal Identity Program (FIP) as it relates to the Canadian Coast Guard (CCG) Fleet vessels.

This Circular replaces Fleet Circular 06-2005.

The goal of this Circular is to ensure a consistent application of the FIP standard throughout the Fleet.

Policy

All CCG employees involved in procurement activities as well as CCG Ships Commanding Officers shall ensure that the FIP standard is applied.

Paint Color Standard

The Canadian Government Specification Board Standard Paint Colors were withdrawn in April 1994.

Objet

La présente circulaire vise à mettre à jour la norme actuelle et à préciser les responsabilités quant à l'application du programme de coordination de l'image de marque (PCIM) des navires de la Flotte de la Garde côtière canadienne (GCC).

Cette Circulaire remplace la Circulaire de la Flotte 06-2005.

Le but de cette Circulaire est d'assurer l'uniformité d'application du PCIM par tous les navires de la Flotte.

Politique

Tous les employés intervenant dans le processus d'approvisionnement ainsi que tous les commandants des navires de la GCC doivent s'assurer que le PCIM est appliqué.

Norme des couleurs de peintures

La norme de l'Office des normes du gouvernement canadien, Couleurs étalons des peintures, a été retirée en avril 1994.

Renseignements :	Directeur, Soutien des Opérations N° de téléphone: 613-990-0341	Date d'expiration: S/O
Queries to:	Director, Operations Support Telephone: 613-990-0341	Expiry Date: N/A

Canada

EKME #583951

To ensure the consistent application of the FIP the Canadian Coast Guard Fleet chose to use the **European RAL and European RAL design system standards** to identify the colour to use to paint CCG vessels as follows :

- CCG Red: RAL3000
- White: RAL 9003
- Beige / Buff: RAL Design 070 7040
- Black: RAL9004
- Yellow: RAL1003
- Deck Grey: RAL7042
- Deck Red Brown: RAL3011

The number RAL 070 7040 represents a color with hue H = 070, lightness L = 70 and chroma C = 40.

Pour assurer l'uniformité d'application du PCIM, la Flotte de la Garde côtière canadienne a choisi d'utiliser **les normes mondiales européennes RAL et le RAL-Design-Système** suivantes pour identifier les couleurs à utiliser sur les navires de la flotte :

- Rouge GCC : RAL3000
- Blanc : RAL9003
- Beige / Buff : RAL Design 070 7040
- Noire : RAL9004
- Jaune : RAL1003
- Gris pont : RAL7042
- Rouge-brun pont : RAL3011

La nomenclature RAL 070 7040 représente la teinte H = 070, la clarté L = 70 et la chroma C = 40.

The **hull and the maple leaf on the funnel** shall be painted in CCG Red.

La coque et la feuille d'érable sur la cheminée doivent être peintes en rouge GCC.

The **diagonal stripe, superstructure / house, hull markings and lifting davits** shall be painted in white.

La **bande diagonale, la superstructure, le rouf, les marquages de la coque et les bossoirs de levage** doivent être peints en blanc.

Lifting gear and masts shall be painted in beige, excepting where they are in close proximity to the stack and subject to continual sooting. In this case, the mast should be painted black from the height of the top of the stack to the top. If masts or goal posts are located such that their location and beige colour interferes with the proper lookout being stood on the bridge, the aft side should be painted a matt black.

L'appareil de levage et les mâts doivent être peints en beige, sauf à proximité immédiate de la cheminée où ils sont constamment exposés à la suie. Les mâts doivent alors être peints en noir depuis la hauteur du sommet de la cheminée jusqu'à leur cime. Lorsque la position et la couleur beige des mâts ou des mâts à portiques gênent la vue de la passerelle, leur face arrière doit être peinte noir mat.

Running blocks close to the hooks shall be painted with black and yellow 'tiger stripes'. Tiger stripes are meant to catch attention out the corner of an eye, as to a swinging hook. All other blocks should be painted in the colour of the ship's structure closest to the block. Therefore blocks hanging off the derrick, should be beige, and blocks located on the bridge front should be white.

Les **poulies mobiles** à proximité des crochets doivent être peintes avec des stries tigrées noir et jaune. Ces stries sont destinées à attirer l'attention du coin de l'œil, comme un crochet pivotant. Toutes les autres poulies doivent être peintes de la couleur la plus proche de celle de la structure du bâtiment se trouvant à proximité. Par conséquent, les poulies du mât de charge doivent être peintes en beige et celles à l'avant de la passerelle doivent être peintes en blanc.

Bulwark rails (steel) and fairleads, bollards and capstan drums shall be painted in black.

Recommendations for modification to the standard should be directed to the Manager, Policies and Standard. Such requests / recommendations should include a description of the modification sought and the rationale for the change.

Les lisses de pavois (acier) et les chaumards, les bollards et les tambours de cabestan doivent être peints en noir.

Les recommandations concernant des modifications à apporter à la norme doivent être transmises au gestionnaire, Politique et normes. Ces demandes/recommandations doivent inclure une description de la modification recherchée et les raisons de ce changement.

Directeur général, Flotte

Gary B. Sidock
Director General, Fleet

National Asset Code - Annex B

Requisition 7047-130020

REGION	Procurement Year	NATIONAL ASSET CODE	Delivery Address	OVERALL PRIORITY
Quebec	13/14	VXA93	Maurice Lamontagne Institute 850, route de la Mer Mont-Joli, Quebec G5H 3Z4	1

ANNEX "C"

COST BREAKDOWN

Sect.	Description	Labour	Material	Overhead & Profit	Total
4.0	Documentation				
5.0	Test & trials				
6.4	Main Hull and appendages				
6.5-15.0	Propulsion system/Propulsion				
6.6	Steering system				
6.7	Electrical system				
6.8	Navigation systems				
6.9	Control and monitoring systems				
6.10	Piping systems				
7.0	Shipping and delivery				
11.0	Cabin configuration				
13.0	Construction Requirements				
14.0	Outfitting				
16.0	Trailer				
17.0	Deliverables				
	…				
	…				
	…				
	…				
	…				
	TOTAL				

ANNEX "D"

SUBCONTRACTORS

Specification Item	Description of Goods/Services (Including Make, Model Number as applicable)	Name of Supplier	Address of Supplier

ANNEX “E”

BIDDER'S QUESTIONS AND CANADA RESPONSES

Solicitation # F7059-130020

REQUIREMENT: ONE (1) GLASS REINFORCED PLASTIC (GRP) RIGID HULL INFLATABLE BOAT (RHIB) AND ONE (1) TRAILER FOR THE DEPARTMENT OF FISHERIES AND OCEANS (DFO)

to be completed as required during bid solicitation.

ANNEX “F” - INSPECTION/QUALITY ASSURANCE/QUALITY CONTROL

1. Conduct of Inspection

(a) Inspections will be conducted in accordance with the ITP provided and accepted by the Inspection Authority and as detailed in this Annex.

(b) The Contractor must provide its own staff or subcontractors to conduct inspections, tests and trials; excepting that Technical Authority or Inspection Authority personnel may be designated in the specifications, in which case the Contractor must ensure that its own staff are provided in support of such inspection/test/trial.

(c) As applicable, the Contractor must ensure that the required conditions stated in the specification prevail at the commencement of, and for the duration of, each inspection/test/trial.

(d) The Contractor must ensure that personnel required for equipment operation and records taking during the inspection/test/trial are briefed and available at the start and throughout the duration of the inspection/test/trial. Tradesmen or FSRs who may be required to effect minor changes or adjustments in the installation must be available at short notice.

(e) The Contractor is to coordinate the activities of all personnel taking part in each inspection/test/trial and ensure that safe conditions prevail throughout the inspection/test/trial.

2. Inspection Records and Reports

(a) The Contractor on the inspection record, test or trials sheets as applicable must record the results of each inspection. The Contractor must maintain files of completed inspection records.

(b) The Contractor's Quality Control (QC) representative (and the FSR when required) must sign as having witnessed the inspection, test or trial on the inspection record. The Contractor must forward originals of completed inspection records, together with completed test(s) and/or trials sheets to the Inspection Authority as they are completed.

(c) Unsatisfactory inspection/test/trial results, for which corrective action cannot be completed during the normal course of the inspection/test/trial, will require the Contractor to establish and record the cause of the unsatisfactory condition to the satisfaction of the Inspection Authority. Canada representatives may assist in identification where appropriate.

(d) Corrective action to remove cause of unsatisfactory inspections must be submitted to the Contracting Authority and to the Inspection Authority in writing by the Contractor, for approval before affecting such repairs and rescheduling of the unsatisfactory inspection/test/trial. Such notices must be included in the final records passed to the Contracting Authority and to the Inspection Authority.

(e) The Contractor must undertake rectification of defects and deficiencies in the Contractor's installation or repair as soon as practicable. The Contractor is responsible to schedule such repairs at its own risk.

(f) The Contractor must reschedule unsatisfactory inspections after any required repairs have been completed.

(g) Quality Control, Inspection and Test records that substantiate conformance to the specified requirements, including records of corrective actions, must be retained by the Contractor for three (3) years from the date of completion or termination of the Contract and must be made available to the Contracting Authority and to the Inspection Authority upon request.

3. Inspection and Trials Process

3.1 Drawings and Purchase Orders

(a) Upon receipt of two (2) copies of each drawing or purchase order, the designated Inspection Authority will review its content against the provisions of the TSOR. Where discrepancies are noted, the Inspection Authority will formally advise all concerned, in writing using a Discrepancy Notice. The resolution of any such discrepancy is a matter for consultation between the Contractor and other Government of Canada Authorities.

3.2 Inspection

(a) Upon receipt and acceptance of the Contractor's ITP, inspection will consist of a number of Inspection Points supplemented by such other inspections, tests, demonstrations and trials as may be deemed necessary by the Inspection Authority to permit him to certify that the work has been performed in compliance with the provisions of the specification. The Contractor must be responsible for notifying the designated Inspection Authority of when the work will be available for inspection, sufficiently in advance to permit the designated Inspection Authority to arrange for the appropriate inspection.

(b) The Inspection Authority will inspect the materials, equipment and work throughout the project against the provisions of the specification and, where non-conformances are noted, will issue appropriate INSPECTION NON-CONFORMANCE REPORTS.

(c) The Contract requires the implementation of a Quality Assurance/Quality Control system, so the Inspection authority must require that the Contractor provide a copy of its internal inspection report pertaining to a work item before conducting the requested inspection. If third party inspections are required by the Contract (e.g. inspections by a certified CWB 178.2 welding inspector), the reports of these inspections must be required before the Work is inspected by the Inspection Authority.

(d) The QA/QC system is a requirement, so if the documentation is presented to the Inspection Authority before an inspection stating that the Work is satisfactory but the Inspection Authority

finds that the Work has not been satisfactorily inspected, the Inspection Authority must issue an Inspection Non-conformance Report against the Work and another against the failure of the Contractor's QA/QC system.

(e) Before carrying out any inspection, the Inspection Authority must review the requirements for the Work and the acceptance and/or rejection standards to be applied. Where more than one standard or requirement is called up and they are potentially conflicting, the Inspection Authority must refer to the order of precedence in the Contract to determine the standard or requirement to be applied.

3.3 Inspection Non-conformance report

(a) An Inspection Non-conformance report will be issued for each non-conformance noted by the Inspection Authority. Each report will be uniquely numbered for reference purposes, will be signed and dated by the Inspection Authority, and will describe the non-conformance.

(b) When the non-conformance has been corrected by the Contractor and has been re-inspected and accepted by the Inspection Authority, the Inspection Authority will complete the Report by adding an applicable signed and dated notation.

(c) At the end of the project, the content of all Inspection Non-conformance Reports which have not been signed-off by the Inspection Authority will be transferred to the Acceptance documents before the Inspection Authority's certification of such documents.

3.4 Tests, Trials, and Demonstrations

(a) To enable the Inspection Authority to certify that the Work has been performed satisfactorily, in accordance with the Contract and specifications, the Contractor must schedule, co-ordinate, perform, and record all specified tests, trials and demonstrations required by the Inspection Authority and the Specifications and any additional tests and trials performed by the Contractor required by the Inspection Authority.

(b) Where the specifications contain a specific performance requirement for any component, equipment, sub-system or system, the Contractor must test such component, equipment, sub-system or system to the satisfaction of the Inspection Authority, to prove that the specified performance has been achieved and that the component, equipment, sub-system or system performs as required by the specifications.

(c) Tests, trials and demonstrations must be conducted in accordance with a logical, systematic schedule which must ensure that all associated components and equipment are proven before sub-systems demonstration or testing, and that sub-systems are proven before system demonstration or testing.

(d) Where the Specifications do not contain specific performance requirements for any component, equipment, sub-system or system, the Contractor must demonstrate such component, equipment, sub-system or system to the satisfaction of the Inspection Authority.

(e) The Contractor must co-ordinate each test, trial and demonstration with all interested parties, including the Inspection, Contracting and Technical Authorities; regulatory authorities; Classification Society; Sub-contractors; etc. The Contractor must provide the Inspection Authority and other Government of Canada Authorities with a minimum of ten (10) working days notice of each scheduled test, trial, or demonstration.

(f) The Contractor must keep written records of all tests, trials, and demonstrations conducted required by the QA System.

(g) The Contractor must in all respects be responsible for the conduct of all tests and trials in accordance with the requirements of the Contract.

(h) The Contracting Authority and the Inspection/Technical Authority reserve the right to defer starting or continuing with any sea trials for any reasonable cause including but not limited to adverse weather, visibility, equipment failure or degradation, lack of qualified personnel and inadequate compliance with safety standards.